



**HOME
INSULATION
DATA**



**THE PHILIP CAREY COMPANY
LOCKLAND . . . CINCINNATI, OHIO**



Digitized by

The Association for Preservation Technology International

For the

Building Technology Heritage Library

<http://archive.org/details/buildingtechnologyheritagelibrary>

FOREWORD

The Carey Rocktex Data Book has been prepared exclusively for use by our Approved Home Insulation Contractors and their Sales representatives and the field men in our own organization. This book must not fall into the hands of outsiders as much of the information contained herein is confidential.

We have attempted to fill this book with good basic information and in order to understand all facts and details it may require much careful study.

The purpose of this information is to help you sell more jobs, study it so it may help you.

We have attempted to acquaint you with competitive methods and competitive materials so you may better present your product and service when the occasion requires.

This is a data book and not a sales manual. Use the Carey Presentation Book to help you sell from the visual standpoint.

The Carey Rocktex Data Book is the property of The Philip Carey Company and is loaned subject to recall with the understanding that it is not to be used against the best interests of our company.

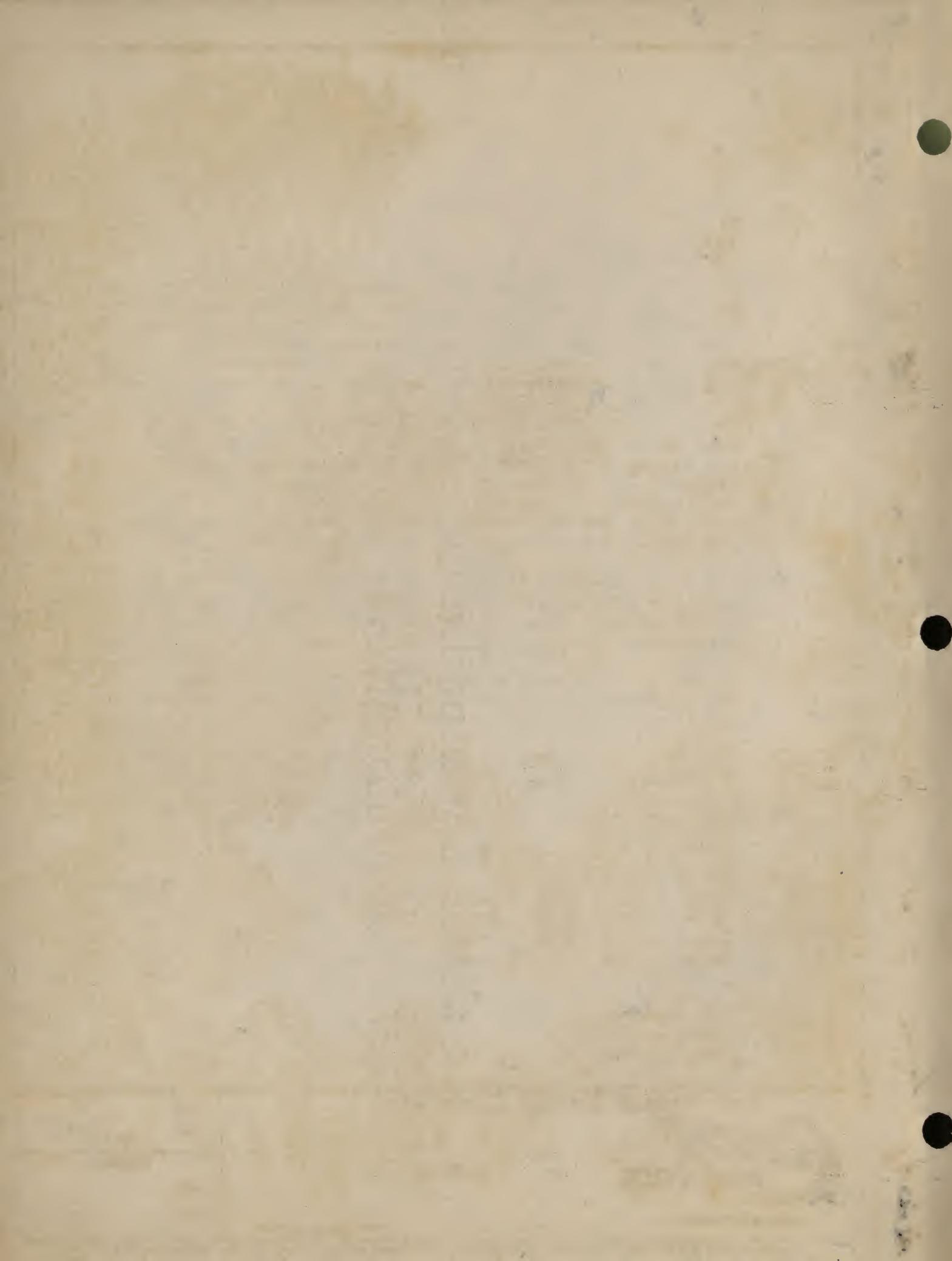


DEPARTMENT

FOREWORD

PAGE	
DATE	9-12-39
SUPERSEDING	
PAGE	
DATE	

APPROVED



INDEX OF CONTENTS

<u>Subject</u>	<u>Page</u>
What is Insulation	1
Different Forms of Insulation	1
What is Correct Building Insulation	2
Correct Building Insulation	2
How to Install Rocktex in Homes	4
What Rocktex Will Do	5
How to Sell Rocktex	7
Possibilities for Salesmen	7
Promoting Carey Rocktex	8
Demonstration Carey Rocktex	9-3
Hints for Salesmen	10
Don'ts for Salesmen	12
Making the Survey	13
Data from Inside of House	14
Types of House Construction	15
Definition of Types	16
Construction Defects	17
Technical Data	23
Thermal Conductivities of Insulations	27
Forms of Rocktex	28
Application - Old Homes - Blowing	30
Application Pictures	33-1,-11 Inc.
Application - Old Homes - Hand Pack	35
Application of Bats	37-1,-3 Inc.
Method of Estimating	38
Selling Prices - Old Homes	39
Estimating Fuel Savings	41
Quick Facts about Rocktex	44
Dry Rot	50
Finance Plan	51

SKETCHES

Indicating Heat Loss	6
Insulating Home - Unfinished Attic	18
Insulating Home - Finished Attic	19
Details of Typical Construction	20
Insulating Rooms over Unexcavated Area	21
Insulating Built-In Bath Tubs	22
Comparing Efficiency	26
Pictures of Blowing Application	29
Pictures of Hand Pack Application	34
Typical Home - Fuel Savings	40

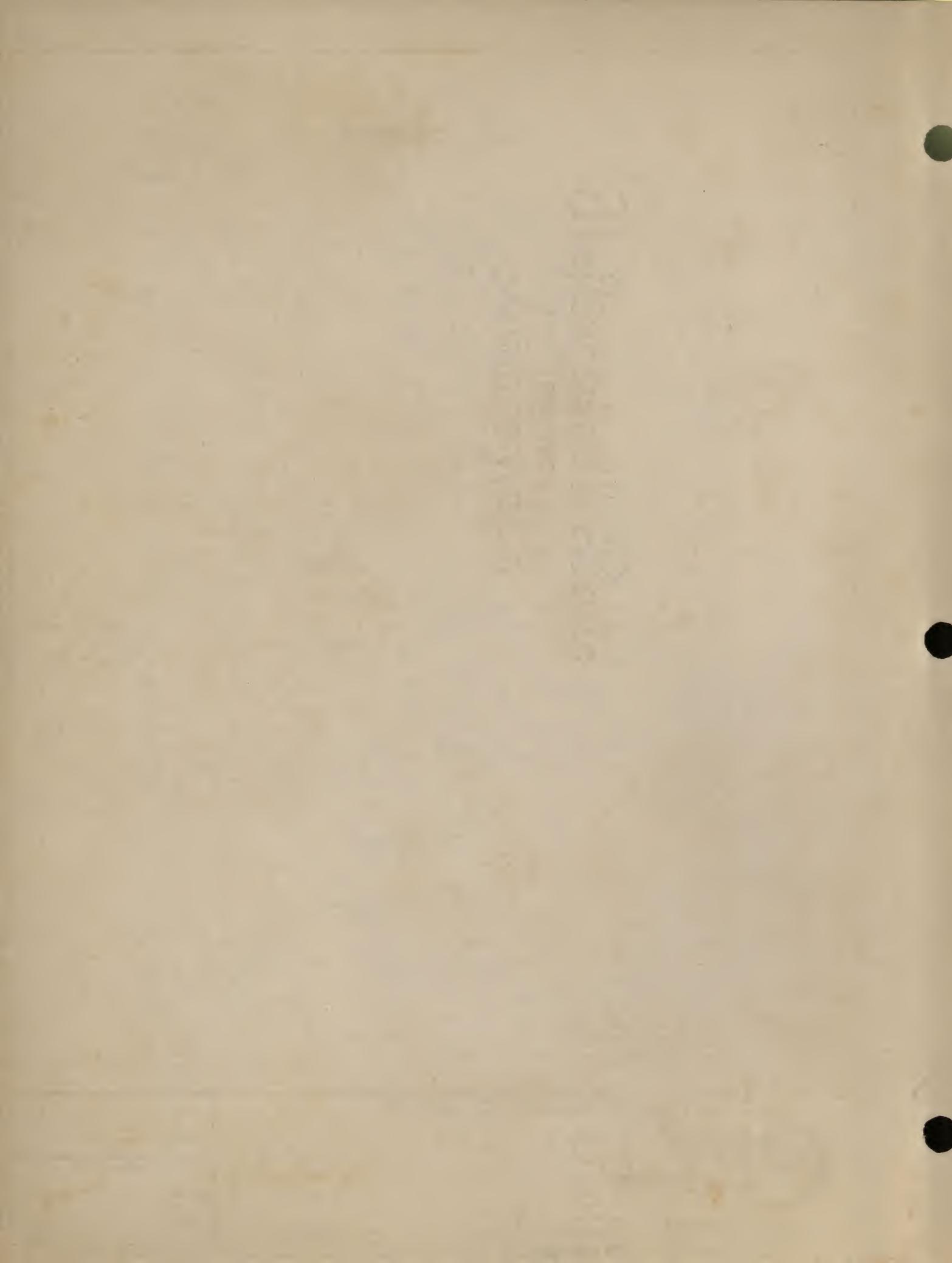
THE PHILIP CAREY COMPANY



DEPARTMENT _____

APPROVED _____

PAGE	
DATE	
SUPERSEDING	
PAGE	
DATE	



WHAT IS INSULATION

Although the word insulation has been used for a great many purposes, and it has been badly misunderstood, the most simple definition we can think of is "a material that resists the passage of heat". This is, at least, a good explanation so far as house insulation is concerned, and it is that to which we are referring in this particular instance.

The conservation of heat, which, of course, means the elimination of waste, has greatly occupied the attention of the industrial world for the past decade. There is nothing that has perhaps contributed more to the solving of these problems than modern insulation. When we say modern insulation, we refer more particularly to a "thick, fireproof, mineral material", which has been found to be most effective.

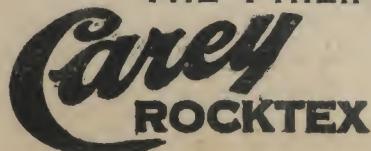
This thick mineral type of insulation has been growing in popularity by leaps and bounds for these past few years. Not only has it been used more for industrial purposes, but in the building field as well, and there has been nothing dealing with home comfort and fuel economy so satisfactory as this form of insulation. Therefore, we can truthfully say "good insulation is thick insulation".

DIFFERENT FORMS OF INSULATION

There are many kinds of insulation fabricated into various forms, but they are all composed of either an animal, vegetable or mineral base. Quite naturally the animal or vegetable matter will eventually deteriorate and return to its original state, unless properly treated, which usually makes the cost prohibitive. But the mineral form of insulation, more commonly called "Rock Wool" will last forever.

The board form of insulation became popular because of its structural strength for building purposes, although the blanket, the oldest of all commercial forms of insulation, has certain advantages over the board because of its flexibility. But the thick application of Mineral Wool for high temperature, refrigerators, and more recently house insulation purposes, is far more effective and has greater utility than anything on the market.

THE PHILIP CAREY COMPANY

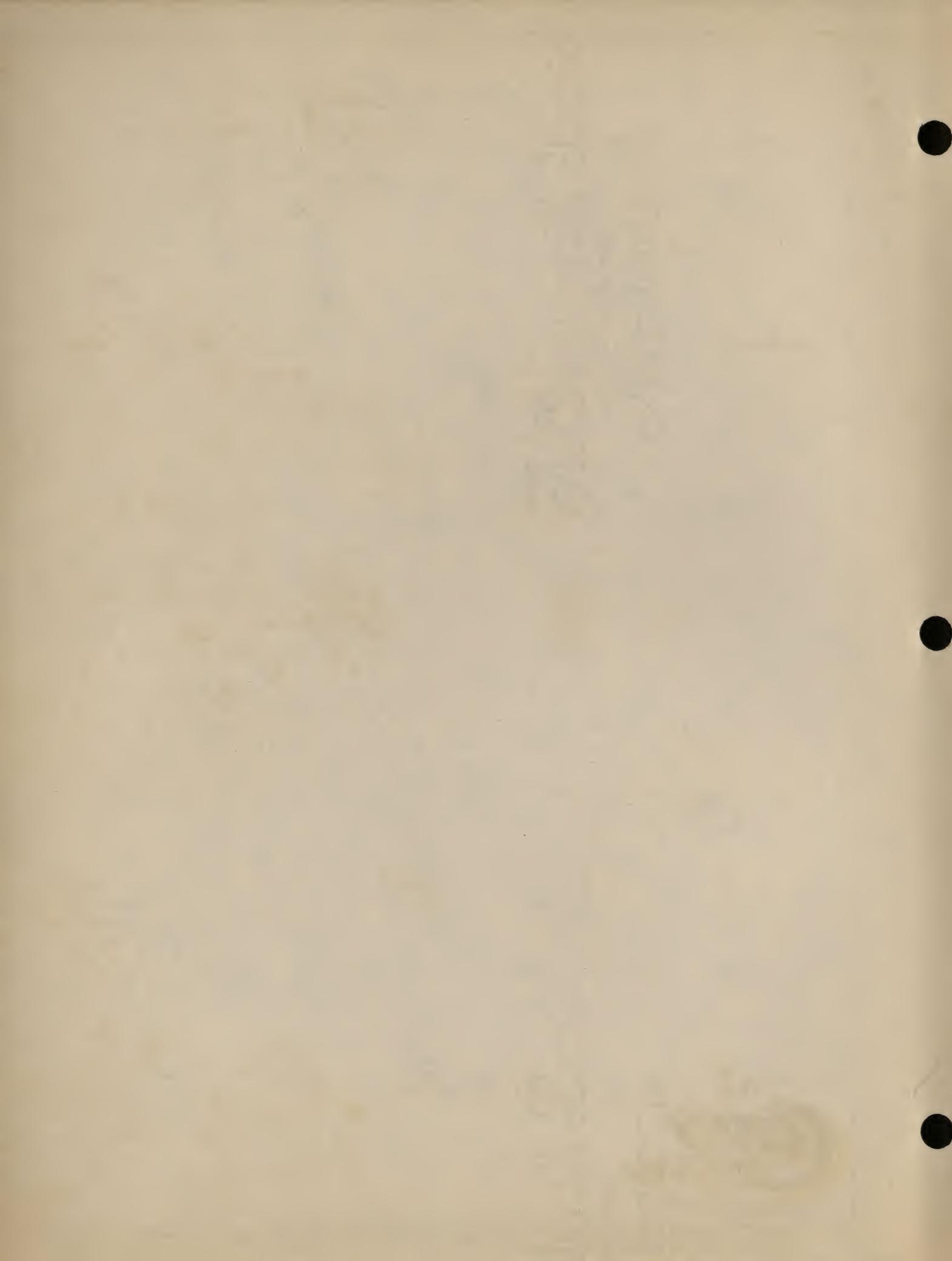


DEPARTMENT

What is Insulation

APPROVED

PAGE	1
DATE	7 24 36
SUPERSEDING	
PAGE	
DATE	



WHAT IS CORRECT BUILDING INSULATION

A correct and efficient building insulation must possess the following characteristics:

It must be a far better barrier to the passage of heat than any of the common building materials such as wood, brick, stone, plaster, etc.

It should be made of permanent raw materials and produced into permanent form.

It should be easy to handle and install, since the application is almost as vital as the material.

It should be vermin proof in order that mice, rodents, etc. will not harbor in the insulation.

It should produce possible fuel savings which would represent a sizable return on the investment.

It should be absolutely fireproof and not a material treated for fireproofness.

It should be water-repellent to resist the humidity conditions encountered in building insulation, and in case of roof leaks to protect the interior decorations of the building to a large extent.

THE CORRECT BUILDING INSULATION

Carey Rocktex Insulating Wool is the correct building insulation because it meets fully every one of the above requirements for correct building insulation.

Carey Rocktex is one of the most efficient non-conductors of heat known today.

Carey Rocktex Insulating Wool installed four inches thick will stop as much heat as fifty-nine inches of solid brick wall, eighty nine inches of solid concrete, or two hundred eight inches of solid marble. (See technical data, page 26.)

Carey Rocktex is the result of melting a combination of raw mineral materials, properly chemically balanced, and blasting this molten mass into



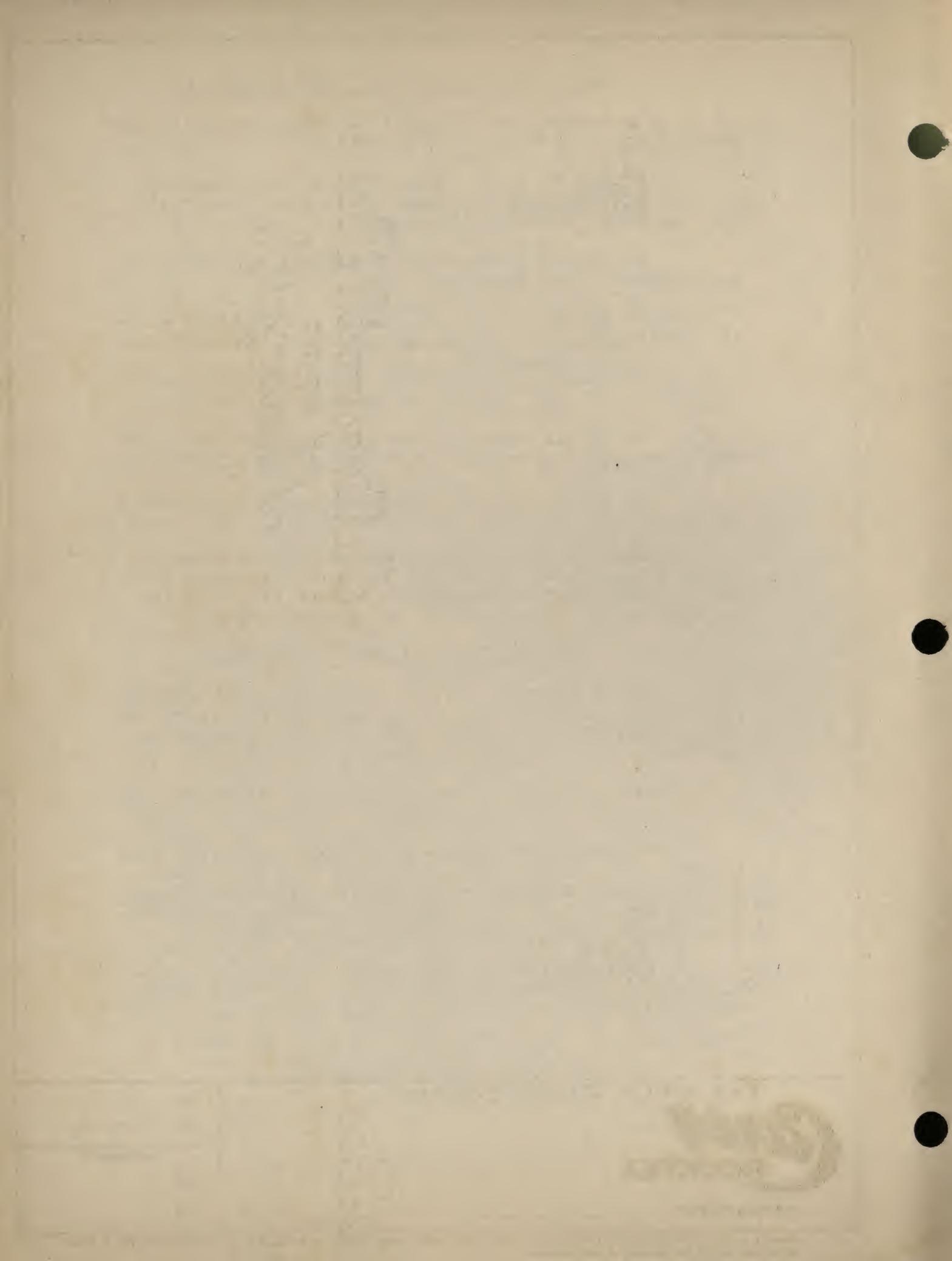
THE PHILIP CAREY COMPANY

Correct Building Insulation

DEPARTMENT

APPROVED

PAGE	2
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	



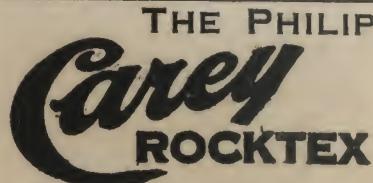
millions of tiny silk-like fibres. The resultant material is impervious to decay and will retain its high insulating value as long as the life of the building.

Carey Rocktex is easy to handle and install. It is manufactured into different forms, suitable for different conditions in the field. It comes in loose fibre, granulated, and bat forms, for both the blowing applicator and hand pack applicator. These forms are adapted to both new and old construction.

Carey Rocktex offers an attractive investment because of the large reduction of heat transfer. In new construction, the reduction of radiation required will offset to a large extent, the cost of application. The full cost of an installation of Rocktex can be gained in about four years through fuel savings and this return on the investment is possible as long as the life of the building. This annual saving comes to the owner as an excellent dividend on his Rocktex investment.

As in any insulation of high quality, the value of the insulation depends upon the amount of air entangled, air being the great insulating substance in the material. When Rocktex Insulating Wool is first formed in the blowing chamber, one cubic foot will weigh no more than four or five ounces. The combination of raw materials from which Rocktex Insulating Wool is manufactured, when put into a solid mass would weigh nearly 200 pounds per cubic foot, so that the solid matter in one cubic foot of wool forms not more than one thousandth part of the mass, the remaining 999 parts being air. It is essential that there be sufficient fibre to prevent movement of the air, or convection currents will be set up, assisting the passage of the heat. But if the fibres be too numerous, they will afford passage from their points of contact. It is found, as might be anticipated, that if the wool be compressed beyond a certain point its insulating power is lessened. This is true of all heat insulators without exception.

It is a known fact that the introduction of improper binding material will diminish the efficiency by eliminating air and substituting a vastly inferior insulating material in the place of the air space.



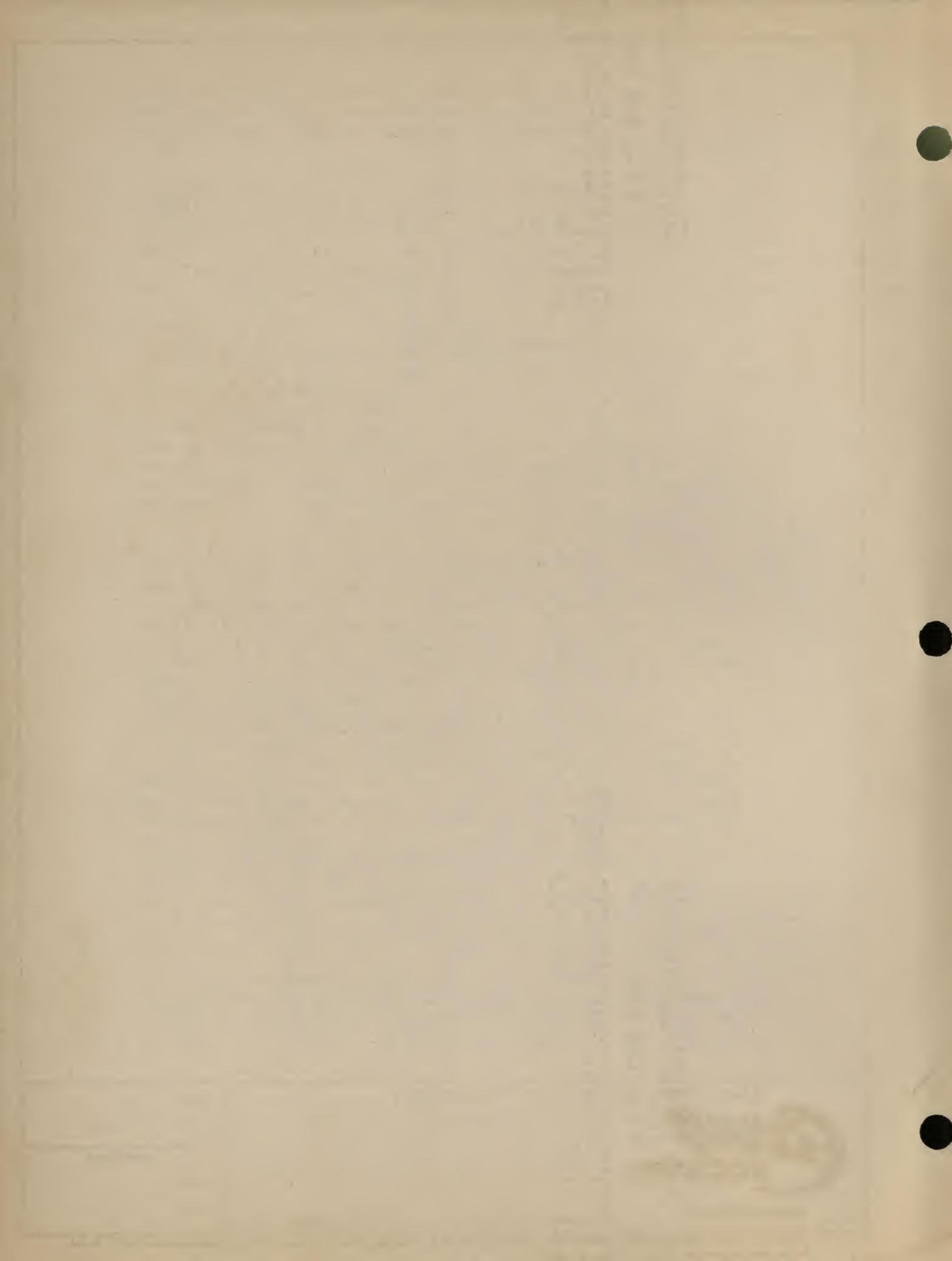
THE PHILIP CAREY COMPANY

Correct Building Insulation

DEPARTMENT

APPROVED

PAGE	3
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	



Insulators in padded form are inferior to fibrous ones in their capacity to prevent the passage of heat or sound. Anything that reduces the porosity of the insulator, beyond a certain point, diminishes its efficiency.

HOW TO INSTALL CAREY ROCKTEX IN HOMES

IMPORTANT: The application of Rocktex to insure maximum results is equally as important as a good material. The installing of different insulation materials by untrained workmen has had more of a damaging influence on this business than anything else. It is just as essential that trained men be used to do this work as it is to have skilled labor in other building trades.

The very strongest selling argument we have, particularly in dealing with the lady of the house, is the fact that we scientifically install this material without dirt, annoyance or inconvenience, and if you can convince them on this subject, it will require very little selling from other angles.

The application of Rocktex by both the blowing method and the hand-pack method is not an experiment, but the result of a careful study and actual experience over a period of several years with hundreds of satisfied customers. Rocktex is the best material obtainable for the purpose, and you can furnish a complete service and give the home owner advice on how to improve other faulty conditions in building construction.

In fact, the personnel of our House Insulation Department are pioneers in the field. Previous to this time, insulation material dealers would usually tell the home owner, who would make inquiry, that they would sell him the material; the result was usually an inferior installation, which naturally had damaging effect on house insulation.

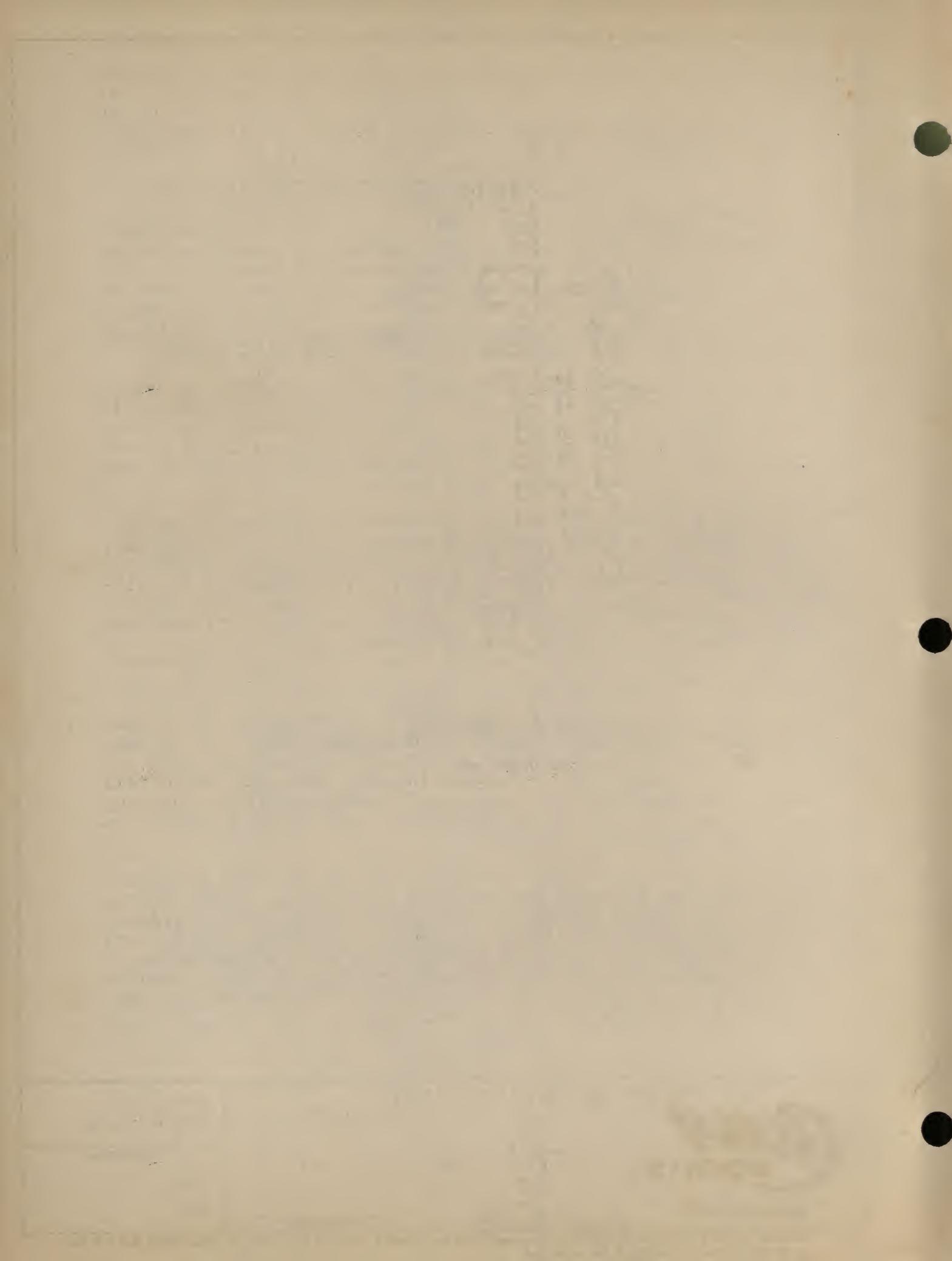
It is just as essential to see that air leaks in the basement are properly caulked up, slots running from the basement to the attic closed, loose windows and doors made tight and faulty building construction in general corrected, as it is to have a good material properly installed in order to get the best results from insulation, and this can only be observed and corrected by experienced workmen.



DEPARTMENT

How to Install Rocktex

PAGE	4
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	



WHAT ROCKTEX WILL DO

It is almost unbelievable what a properly applied insulation will do. Regardless of the outside temperature, there will be a noticeable difference in the inside atmosphere and general conditions of the home just as soon as Rocktex is installed. It not only acts as a sound deadener, but seems to make the house more stable, equalizes temperature and will actually save labor and reduce fuel bills, as well as keep out summer heat.

Rocktex properly installed, four inches thick, is equal, in efficiency, to about eight layers of 1/2" board or blanket, according to the reports of various testing laboratories. Aside from making the home more comfortable at all seasons of the year, it will effect a fuel saving up to 30 per cent, and don't forget -- comfort is as important to the man that owns his home as fuel savings. Top floor rooms will be up to 10° cooler during the hot summer days.

At the same time Rocktex costs no more than any less effective or inferior so-called insulations, and is comparable in price to similar materials installed in this way.

Comfort and fuel saving are by no means all that may be accomplished by properly insulating the home. A well known doctor made the statement "A large percentage of our sickness, particularly in the winter time, is due to uneven temperatures and improper ventilation in the home". Therefore, the good that may be done, or the inconvenience that may be prevented as the result of a properly insulated home, is inestimable.

When the home is insulated it retains the humidity to the point of allowing you to be comfortable at even lower temperature.

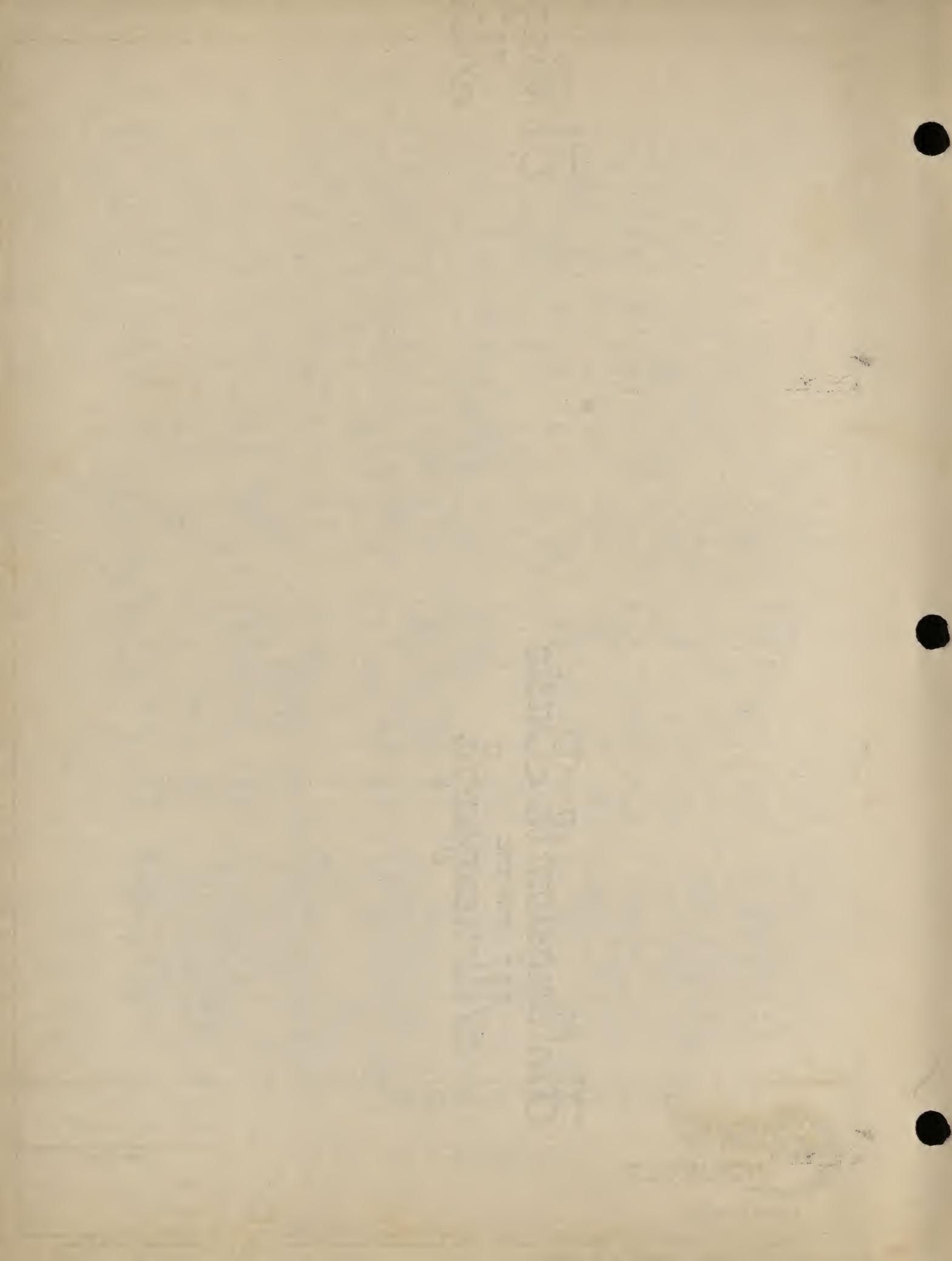
The sketch on page 6 shows where heat is lost from the home as well as the percentage of loss from the particular points. You will note from this sketch that 27% of the heat loss from your home is through cracks and crevices, 30% is lost through the window and door glass, while 43% is lost through the walls, roof, floors overhanging open porches and floors of rooms, located over unexcavated areas. Methods of correcting losses at these points will be explained later.

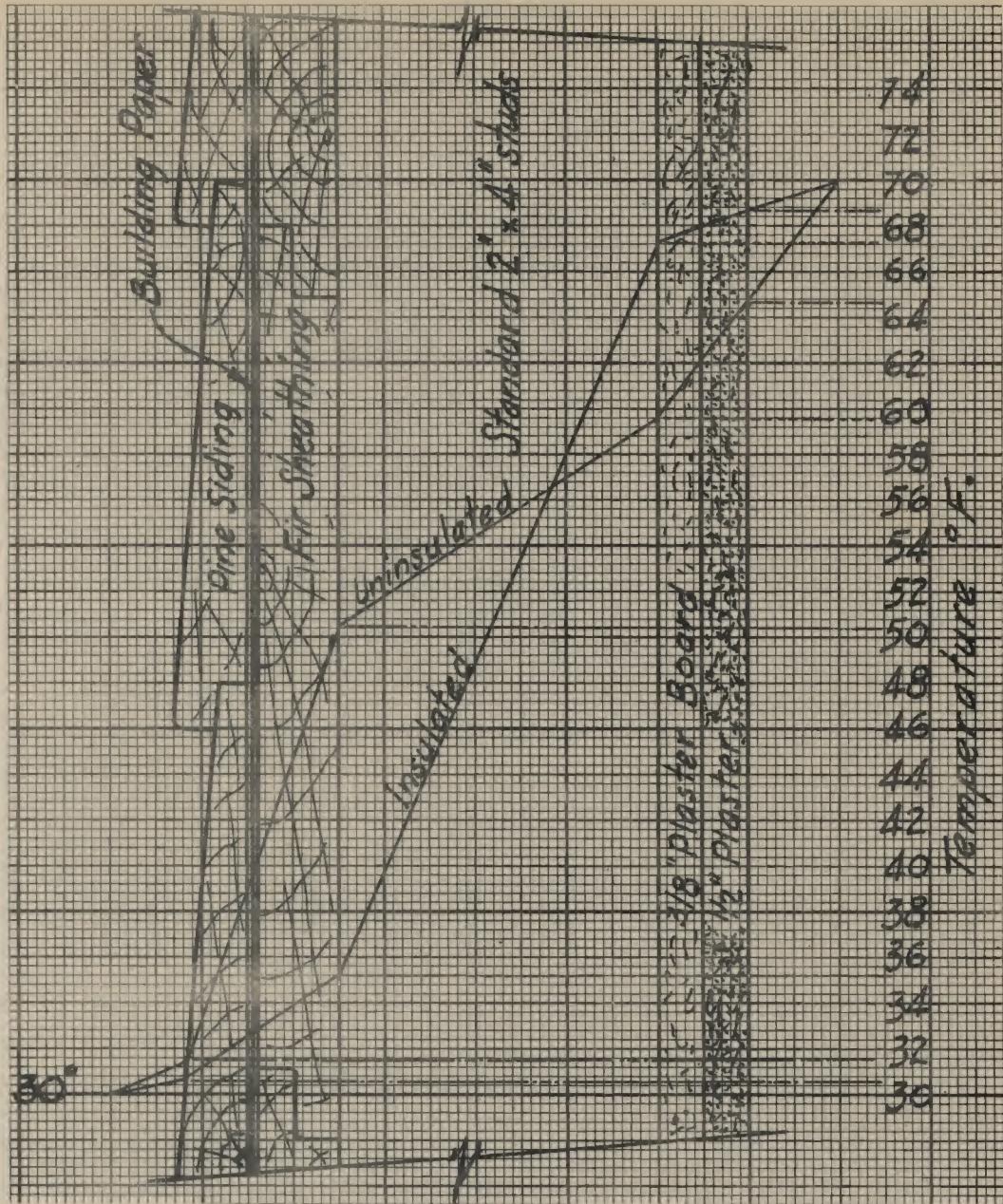


DEPARTMENT

What Rocktex Will Do

PAGE	5
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	





An uninsulated wall as indicated by the above sketch, and with temperatures of 30° F. outside and 70° F. inside has an inside plaster wall temperature of 64.2° F. This same wall when insulated to full stud depth (3-5/8") has an inside plaster wall temperature of only 68.6° F.

Rocktex provides an outside wall inside surface temperature increase of 4.4° F. above the uninsulated condition. Rooms with wall and air temperature closely balanced escape floor drafts.

THE PHILIP CAREY COMPANY

Carey
ROCKTEX

DEPARTMENT

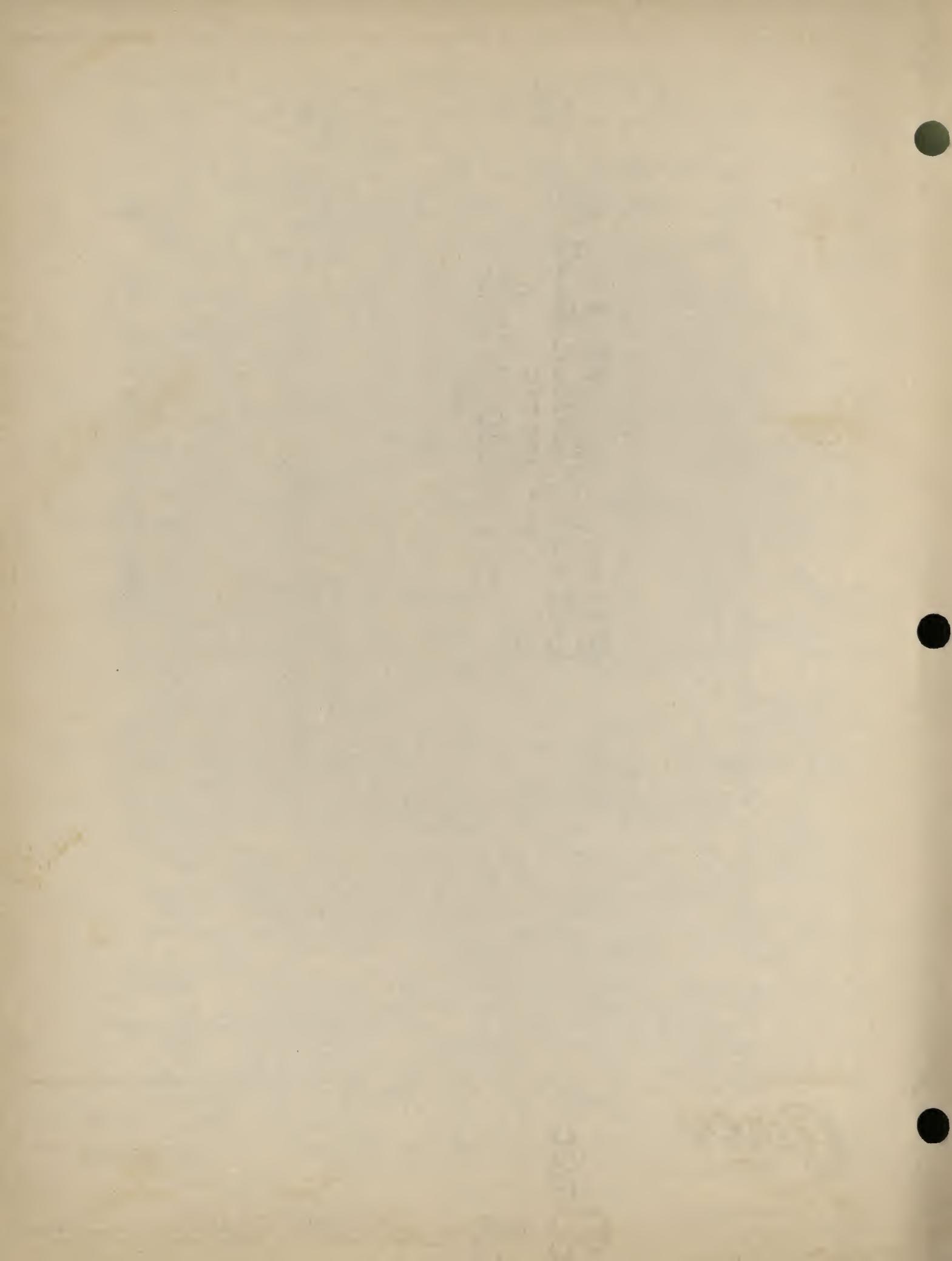
SIDE WALLS SHOULD BE INSULATED

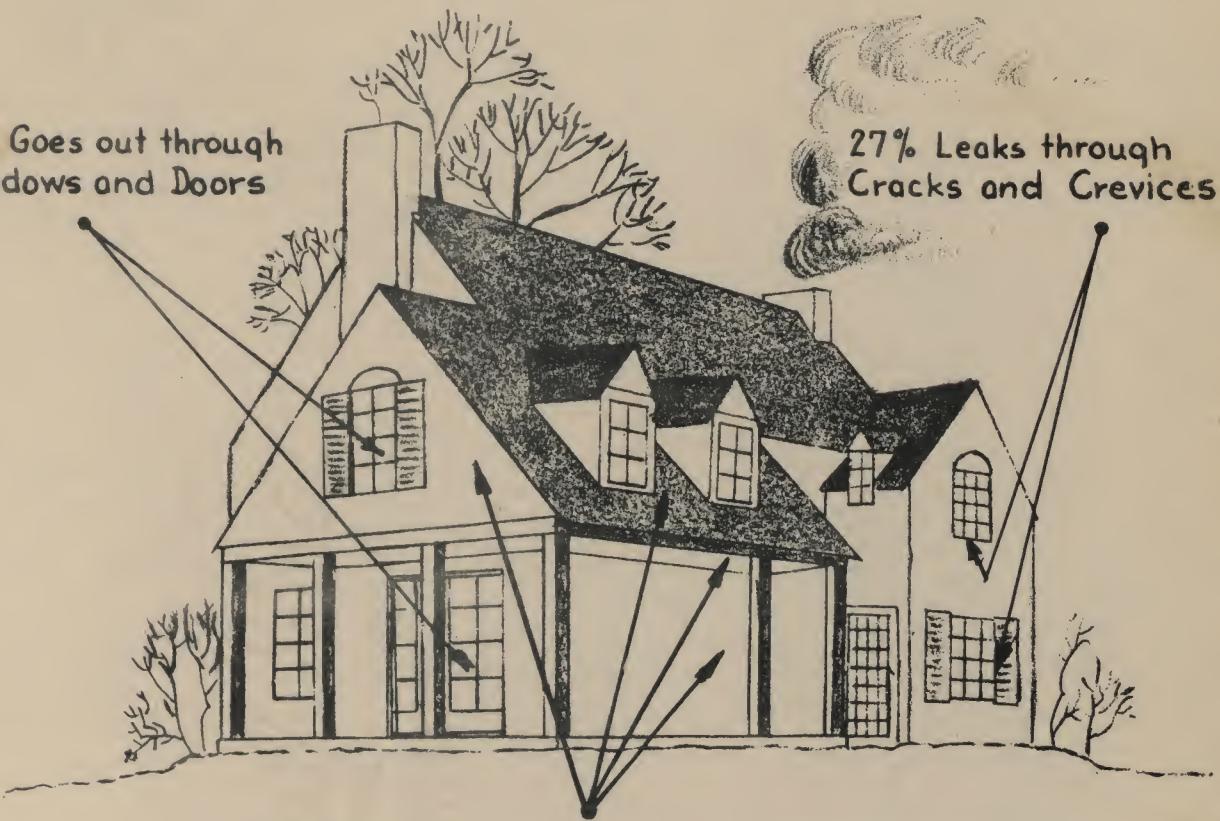
PAGE 5-1
DATE 3-18-38

SUPERSEDING

PAGE
DATE

APPROVED





30% Goes out through
Windows and Doors

27% Leaks through
Cracks and Crevices

43% OF HEAT LOSS IS THROUGH
ROOF, WALLS AND FLOORS

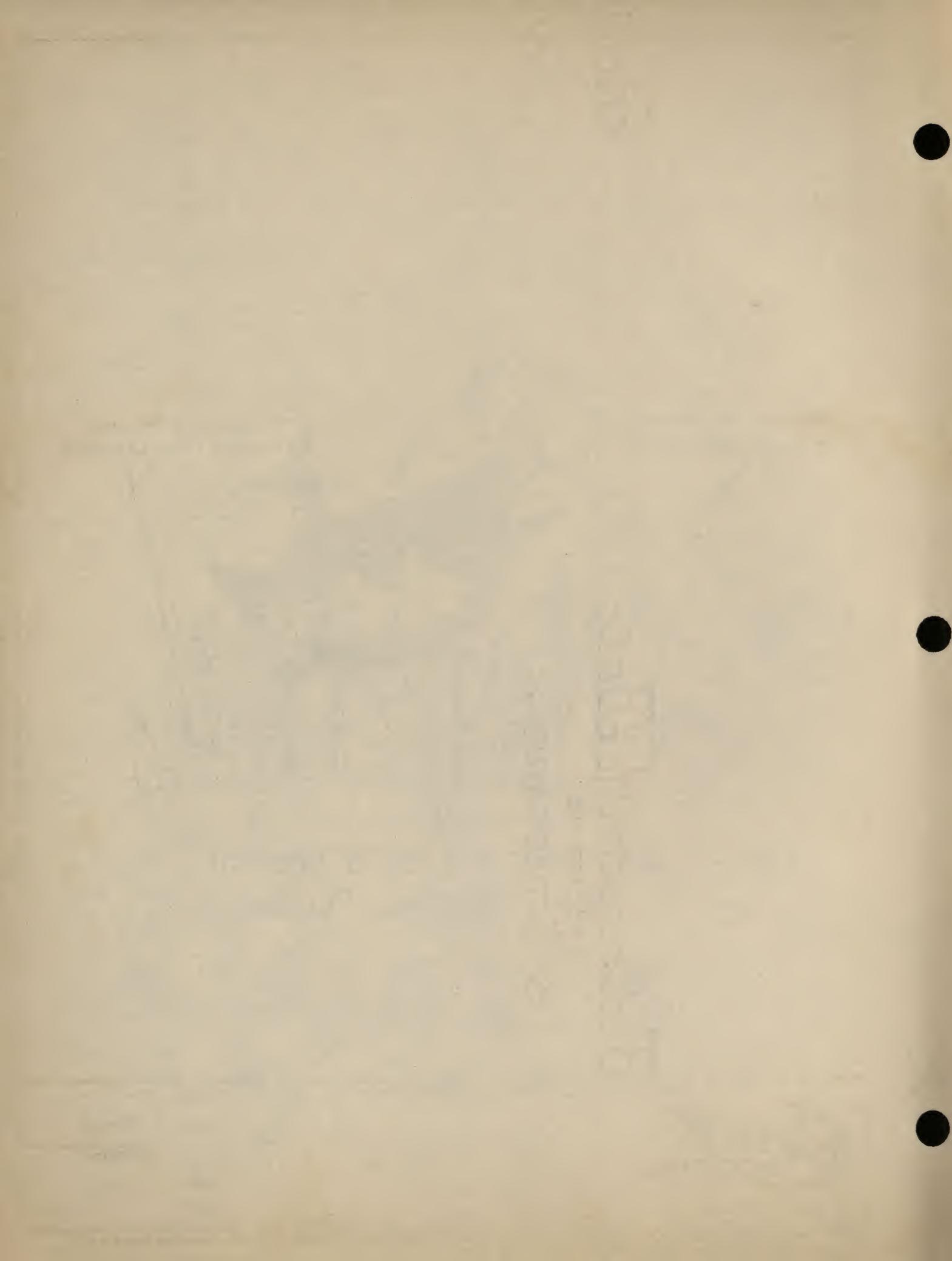
THE PHILIP CAREY COMPANY
Carey
ROCKTEX
DEPARTMENT

INDICATING HEAT LOSS
IN HOME

SAC

APPROVED

PAGE	6
DATE	7-20-36
SUPERSEDING	
PAGE	
DATE	



HOW TO SELL ROCKTEX FOR HOME INSULATION

If it were possible for home owners to see the heat units actually escaping from their uninsulated homes, they would simply be amazed, and it would not be necessary to sell them on the idea of insulating, but like anything else intangible or comparatively new, regardless of its value, it must be sold. But we think you will agree with our wonderful salient points of BETTER HEALTH CONDITIONS, MORE HOME COMFORT and GREATER FUEL ECONOMY. These convincing arguments in the hands of a competent man will break down most any resistance.

In fact, the only thing we can think of as a logical excuse for not insulating would be a lack of finances, but inasmuch as this is not an expense but a real monetary investment, and it can be paid for out of savings, or, at least, over a two years' period, it would seem to eliminate every possible excuse that a home owner might offer (See page 51)

In addition to the outstanding sales features that we have briefly outlined here, we have a wealth of other information on how to present and get the best results out of this particular proposition, which will follow in due time together with personal assistance, which should make the selling of Rocktex more a matter of industry than anything else.

It has not been our purpose in preparing this brief memorandum, however, to tell you all that should be said and done in order to get the best possible results, but this data is intended more for the experienced salesman, who knows the fundamentals of selling and how to apply this knowledge.

Together with all of these decidedly favorable conditions, last but not least isn't it some source of satisfaction to sell a material and service that will actually accomplish real results and be of lasting benefit to customers?



DEPARTMENT

How to Sell Rocktex

PAGE	7
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	

1

2

3

1. *Thlaspi arvense* L.
2. *Thlaspi arvense* L.

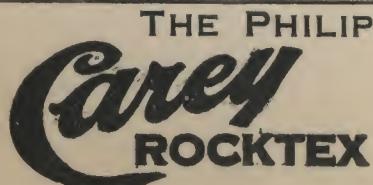
THE TELEPHONE - A SALES TOOL

The telephone can be used to good advantage in obtaining interviews. When using the telephone to obtain the interview, do not attempt to sell your product or deliver the strong punch in your sales story. The telephone serves as an entree and that's all you should expect of it.

Don't appear over-anxious or plead with the prospect. Talk slowly and be courteous. You have much to offer him. It's well worth his looking into regardless of his ultimate decision. Do not offer apologies in forms of solicitation. Just state your case frankly and clearly.

Make a record of each phone call after it is made. In case of appointment you then have the ammunition to start the interview and make it rapid-fire.

The phone is also a valuable sales tool in calling attention of prospects to an installation in their neighborhood. If possible, get them to visit the job with you.



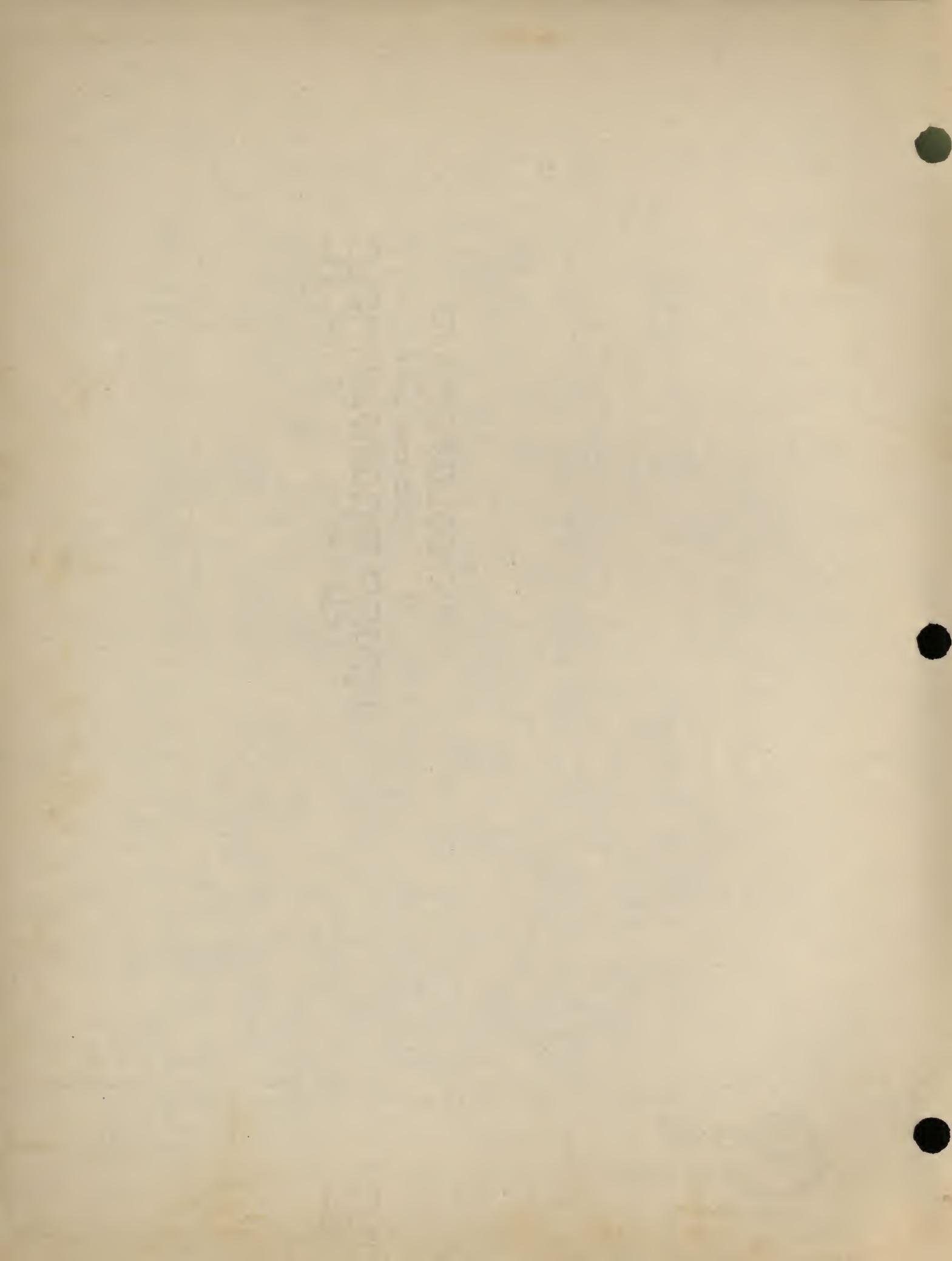
THE PHILIP CAREY COMPANY

Promoting Carey Rocktex

DEPARTMENT

APPROVED

PAGE	8
DATE	9-12-39
SUPERSEDING	
PAGE	
DATE	



PROMOTING CAREY ROCKTEX

Many applicators prepare and execute merchandising programs in which the activities of the salesman or representative play a vital part. The effectiveness of these programs and the return you get from your efforts, are entirely dependent upon how closely you follow the program which has been developed and how well you capitalize upon it.

From experience over a long period of time, it has been determined that no one particular form of promotion or advertising is more indispensable to the successful selling of home insulation than direct mail advertising. It is necessary with direct mail advertising, however, to properly synchronize your sales calls with the mailing or promotion. Therefore, it depends entirely upon the salesman or representative as to the success of a program of this nature.

When using the direct mail method of promotion, be sure that your mailing list is sufficiently small to allow you to call on each prospect during the process of the campaign. Mass distribution of direct mail pieces is very extravagant in that it prevents a close follow-up with personal call, and in many cases, merely paves the way for a competitive applicator who may call on that prospect before you get around to it.

A very good plan which has been used by many applicators who have proven to be quite successful is that they have found that by taking a list of fifteen to twenty names from a select list, and then by conducting a mailing campaign against the small group and during that time have the salesman devote his energies entirely to these prospects, that this form of concentrated work has been giving good results.

The use of window displays is another form of promoting Carey Rocktex; however, we do not believe from our past experience that a blowing applicator obtains much benefit from window displays in view of the fact that the average applicator is located off a main thoroughfare, and a window display would not be seen by the clientele which he normally calls upon.

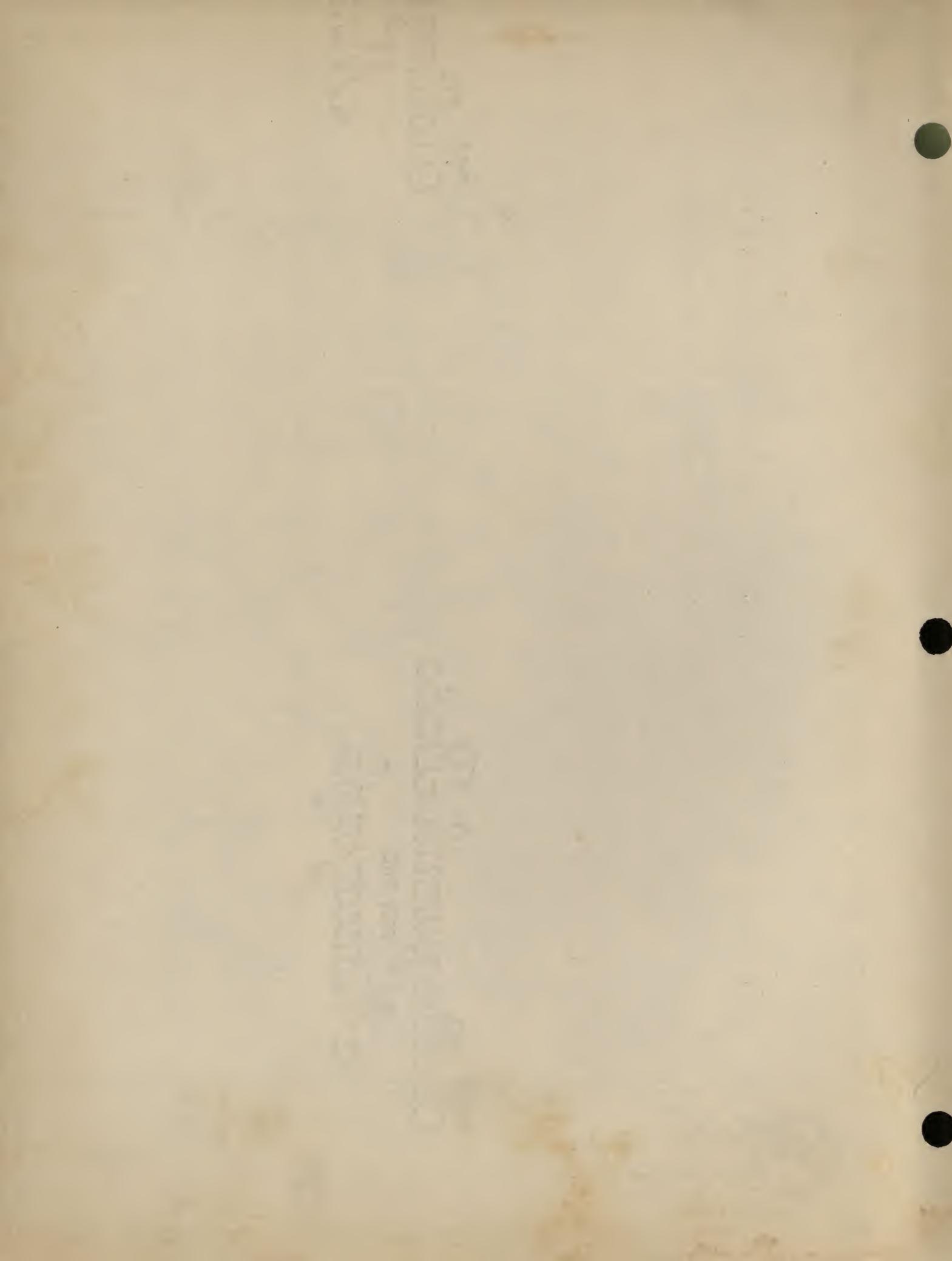


DEPARTMENT

Promoting Carey Rocktex

APPROVED

PAGE	9
DATE	9-12-39
SUPERSEDING	
PAGE	
DATE	



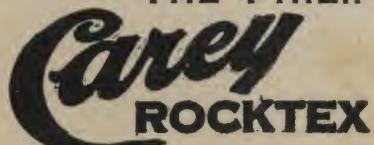
Many applicators carry a schedule with their local newspapers; therefore, it is to the interest of the salesman, or representative, to learn the dates of the insertions and call the attention of his prospects to those ads.

It is advisable that when some of these ads appear the salesman clip a few and place them neatly in his data book or presentation manual. In connection with this thought and to add a small amount of drive in connection with the mounted ad, it would be our suggestion to clip other articles out of the paper regarding the weather conditions, such as the extremely hot or extremely cold spell and mount them around the applicator's ad. This will give the prospect who sees the sales manual an opportunity to tie the climatic conditions with his own living condition.

Radio advertising has not proven to be exceptionally strong in that it requires considerable time to get the public buying from radio promotion. In case the applicator does take time on the radio station, it would be our suggestion to let your prospects know when to listen in and further, it is advisable for the salesman to use the topic of the radio talk as the basis of his conversation during an interview.

There are many other forms of promotion in this particular line of work, among which we might mention the use of the postal card which is left throughout the neighborhood where a job is going to be executed within the next few days. A personal follow-up should be made while the crew is in the neighborhood doing the work referred to on the postal card and such insistence should be applied to induce the prospect to take a few moments to watch the application of the material in the neighbor's house.

THE PHILIP CAREY COMPANY

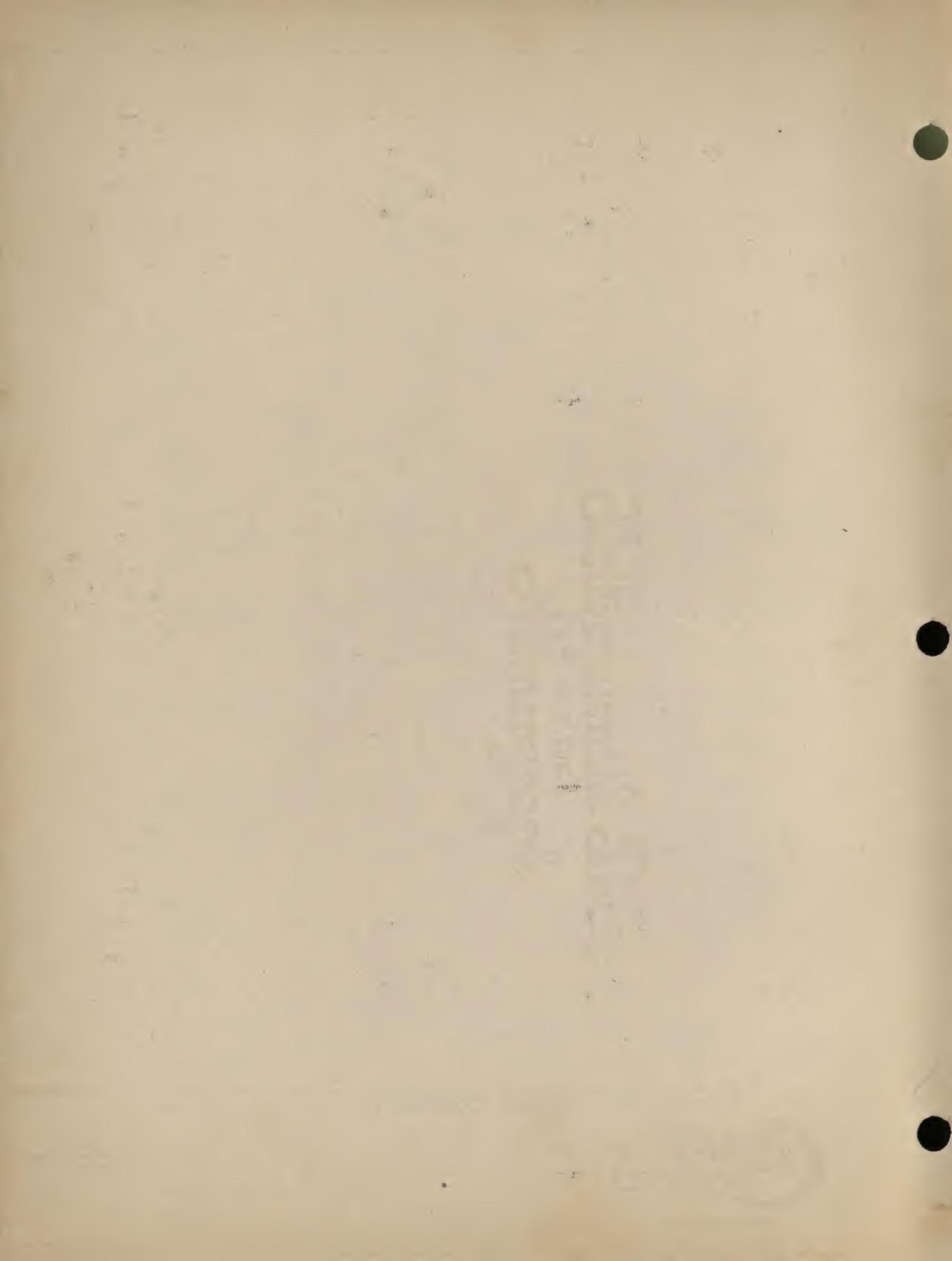


Promoting Carey Rocktex

DEPARTMENT

APPROVED

PAGE	9-1
DATE	9-12-39
SUPERSEDING	
PAGE	
DATE	



DEMONSTRATING CAREY ROCKTEX

To assist you in making sales of Carey Rocktex Home Insulation more easily, it is our recommendation that you use as many demonstrations as possible during your presentation, which will always assist you in getting your story across to the average layman so that he will have complete understanding of what insulation is with respect to its being an efficient material, as well as its part with respect to modern living. It is entirely up to each salesman to make the insulation story as colorful and romantic as he can; however, we suggest that there be no exaggeration of the truth since the truth will be sufficient to convince the home owner.

It is well to make a small dramatic story out of the method under which Carey Rocktex is manufactured and at the same time point out that under these methods of manufacture the material is not only fireproof, but is manufactured in such a manner that it contains millions of dead air cells which are the basis of insulation.

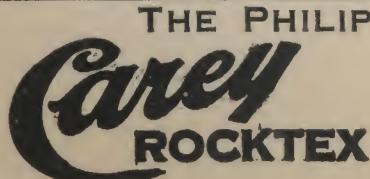
In each and every demonstration that you make it is well to let the prospect do the work, with you merely indicating what is to be done to perform the test. This not only holds the interest of the prospect but makes the demonstration more convincing.

Thermometer Test

In conducting the thermometer test it is well to place two thermometers at average body height and about six inches from an outside wall. Place a newspaper between the wall and one of the thermometers and after a short period of time the large difference in reading of the two thermometers, will convince the prospect that there is a decided heat transfer from the outside wall.

Blow Torch Test

Light a blow torch and place in the prospect's hand, and in the other hand place a sample of wool on which you may then place a copper coin. Instruct the prospect to place the flame of the torch on the copper coin and hold same in that position until the coin becomes white hot. Even with this tremendous heat the prospect will not feel the heat through the rock wool.



THE PHILIP CAREY COMPANY

Demonstrating Carey Rocktex

DEPARTMENT _____

APPROVED _____

PAGE	9-2
DATE	9-12-39
SUPERSEDING	
PAGE	
DATE	

who's becoming
the new
young

Ice Cube Test

Use a large size sample box and have the prospect, place an ice cube in the center of the wool of the sample box, covering same with the balance of the wool that was removed at that time. Place another ice cube in a saucer and when the cube in the saucer has melted let the prospect see how little the other ice cube has melted which is enclosed in the sample of Rocktex Wool.

Waterproof Demonstration

It is recommended that small iced tea strainers be used to conduct a waterproof test in that a small quantity of wool may be placed in each strainer. Place waterproofed wool in one strainer and non-waterproofed wool in the other. Let the prospect then pour water on the wool in the strainers until the water runs over or runs through the wool. Then let the prospect empty the wool in his hand and squeeze to see how much water has been absorbed in this test.

The purpose of the waterproof test is to convince the prospect that a waterproofed material should be used in his home since any leak in the ceiling could cause considerable damage, as well as destroy the insulating value of the insulation and require replacement after the leak has been repaired.

We have set out only a few of the many effective tests which may be made. See instructions furnished with the Rocktex Demonstration Kit for additional demonstrations.



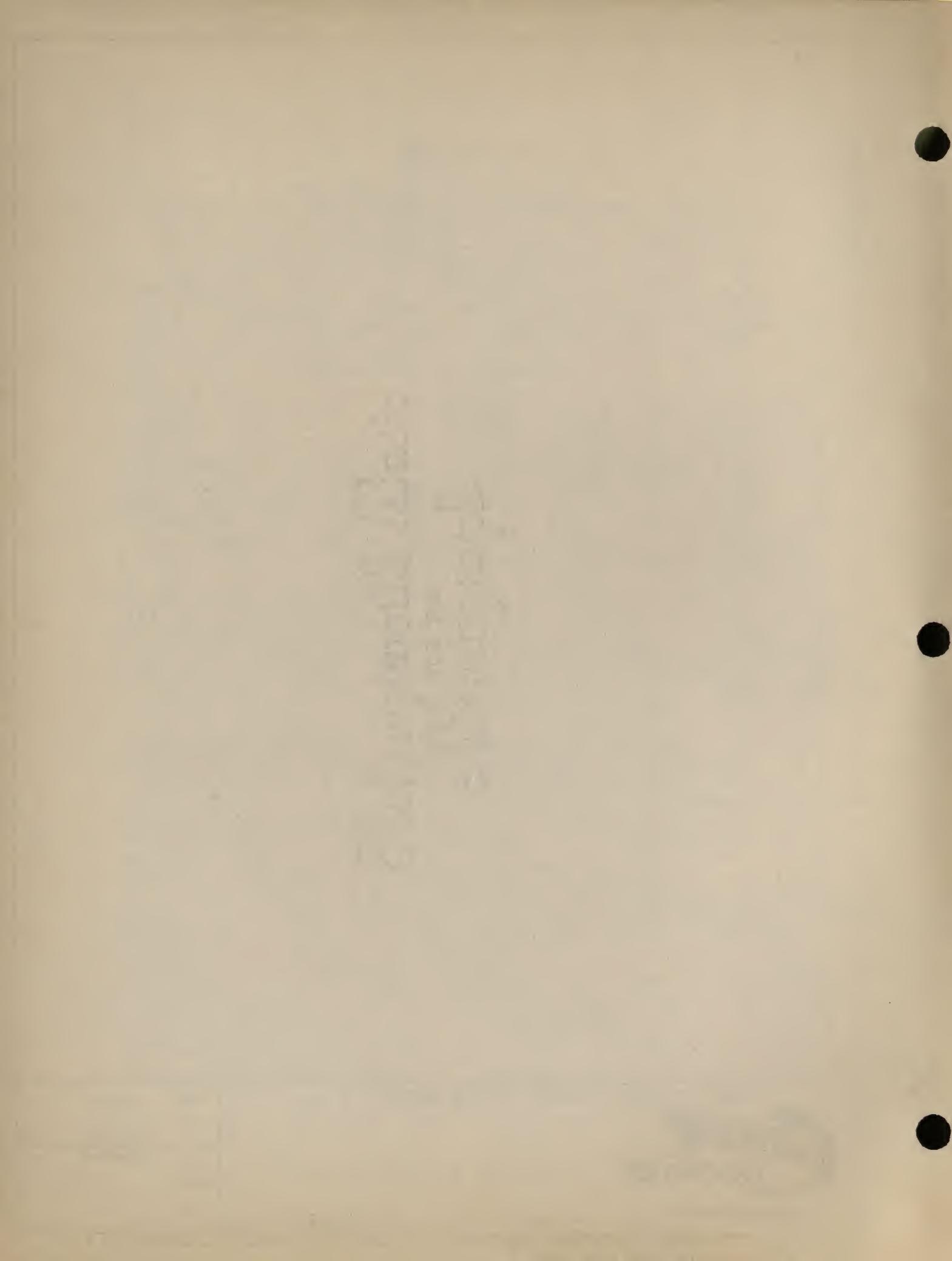
THE PHILIP CAREY COMPANY

Demonstrating Carey Rocktex

DEPARTMENT

APPROVED

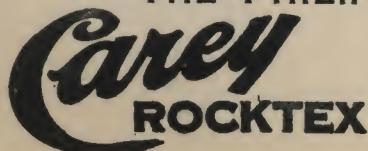
PAGE	9-3
DATE	9-12-39
SUPERSEDING	
PAGE	
DATE	



HINTS FOR SALESMEN

1. If possible, get the home owner to make the survey of his house with you.
2. At least fifty per cent of your sale is made during the survey, and do not lose the opportunity to diplomatically call defects in house construction to his attention.
3. It is better, however, to let the home owner first tell you about the defects in construction if he seems to recognize them.
4. Call attention to the lath lines in the ceiling next to the attic or roof, if there are any. A sure sign of heat filtration.
5. Call attention to the stair well, which is usually the real cause of a drafty hall or rooms.
6. Call attention to the attic door or any hatchway going up into the attic. They are usually very loose.
7. If the side walls are open or the plate is not well seated in the attic, this perhaps is causing cross drafts under floors and up side wall slots.
8. Check over the basement and see if the side walls are open at the bottom, and if there are any cracks between sill and wall.
9. Check the doors and windows and all possible places for unnecessary drafts. Weatherstripping usually corrects this.
10. If there is a fire place, see if the open stairway has a heavy draft at the bottom. If so, see if they keep the damper in the fireplace closed when not in use. This usually makes a good living room unlivable in cold weather.
11. Lay stress on the fact that a few hundred dollars for proper insulation is a small premium to pay for giving him what he did not get when he paid thousands of dollars for his home.

THE PHILIP CAREY COMPANY



DEPARTMENT

Hints for Salesmen

PAGE	10
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	

APPROVED

1866
July 25

1866
July 25

1866
July 25

12. Look for unnecessary openings all over the house causing drafts, heat loss or open places where cold can come in, and recommend that they be closed in a way that seems most practical.
13. More home comfort, better health conditions, and greater fuel economy are the main selling features, but other angles may be developed, after talking with your prospect or making a careful survey of his house.
14. After examination of the house, make a demonstration in the kitchen on the gas range of the fireproof qualities of Rocktex, according to instructions. This is very important! Offer other demonstrations or sales talks, which often obviate the excuse that "the wife does not know anything about insulation" or a call-back to sell her on the idea. Demonstrate the water resistance of Rocktex products. This is extremely important, and you can create a lot of sales points around it. Sell the wife on home insulation when you make the survey.



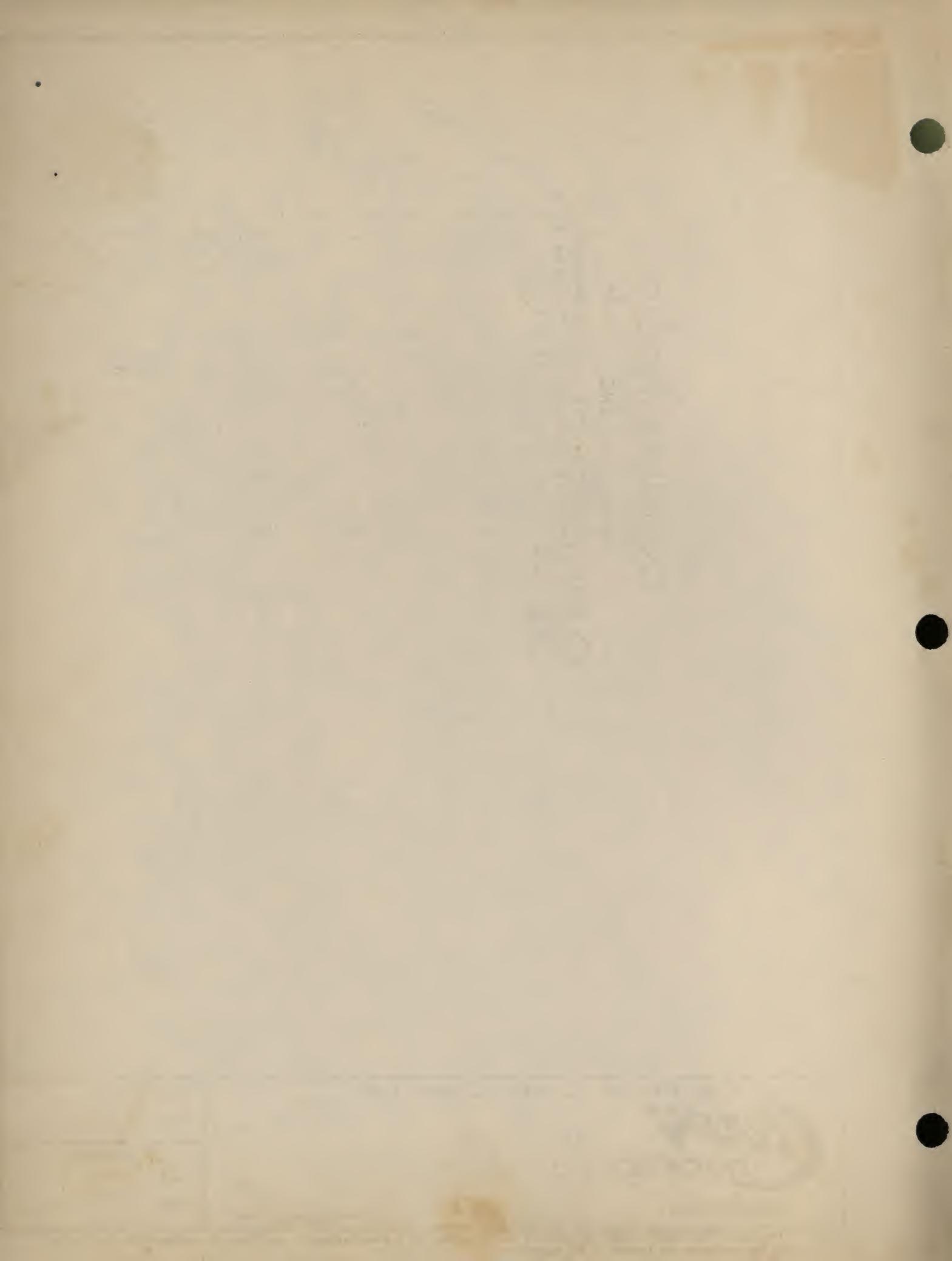
DEPARTMENT

Hints for Salesmen

APPROVED

Property of THE PHILIP CAREY COMPANY; Lockland, Ohio, and is loaned subject to recall, with the understanding that it is not to be used against the interests of the company.

PAGE	11
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	



"DON'TS" FOR SALESMEN

1. Don't knock a competitor or his product.
2. Don't try to sell a prospective customer until you have gotten his viewpoint.
3. Don't disagree with a prospect, and let your reply be indirect constructive selling.
4. Don't be too technical. Remember the home owner as a rule only understands homely comparisons about insulation.
5. Don't be too harsh in your criticism about the home owner's property or the man who constructed it. A man's home is his pride.
6. Don't sell a home owner complete side wall insulation if an attic job will give results.
7. Don't promise a customer anything that is not in our contract. Sell your service along good business lines.
8. Don't quote prices on a square foot basis. Sell the job as a complete service.
9. Don't sell the job too cheaply. You expect to give the home owner complete satisfaction. You are entitled to a fair profit.
10. Don't enlarge on what Rocktex will accomplish. The truth is sufficient, and if you can get this over in the right way the sale will be made.
11. Don't stress the entire elimination of drafty conditions. Air Currents that set up in the home are one of the hardest things in the world to control.
12. Don't use high pressure methods to try to close the sale on first call. Use discretion.
13. Don't fail to follow your prospects up closely with telephone calls, letters, or, best of all, personal calls.
14. Don't give a customer an exact installation date until your office has been consulted.

THE PHILIP CAREY COMPANY



DEPARTMENT

Don'ts for Salesmen

PAGE 12

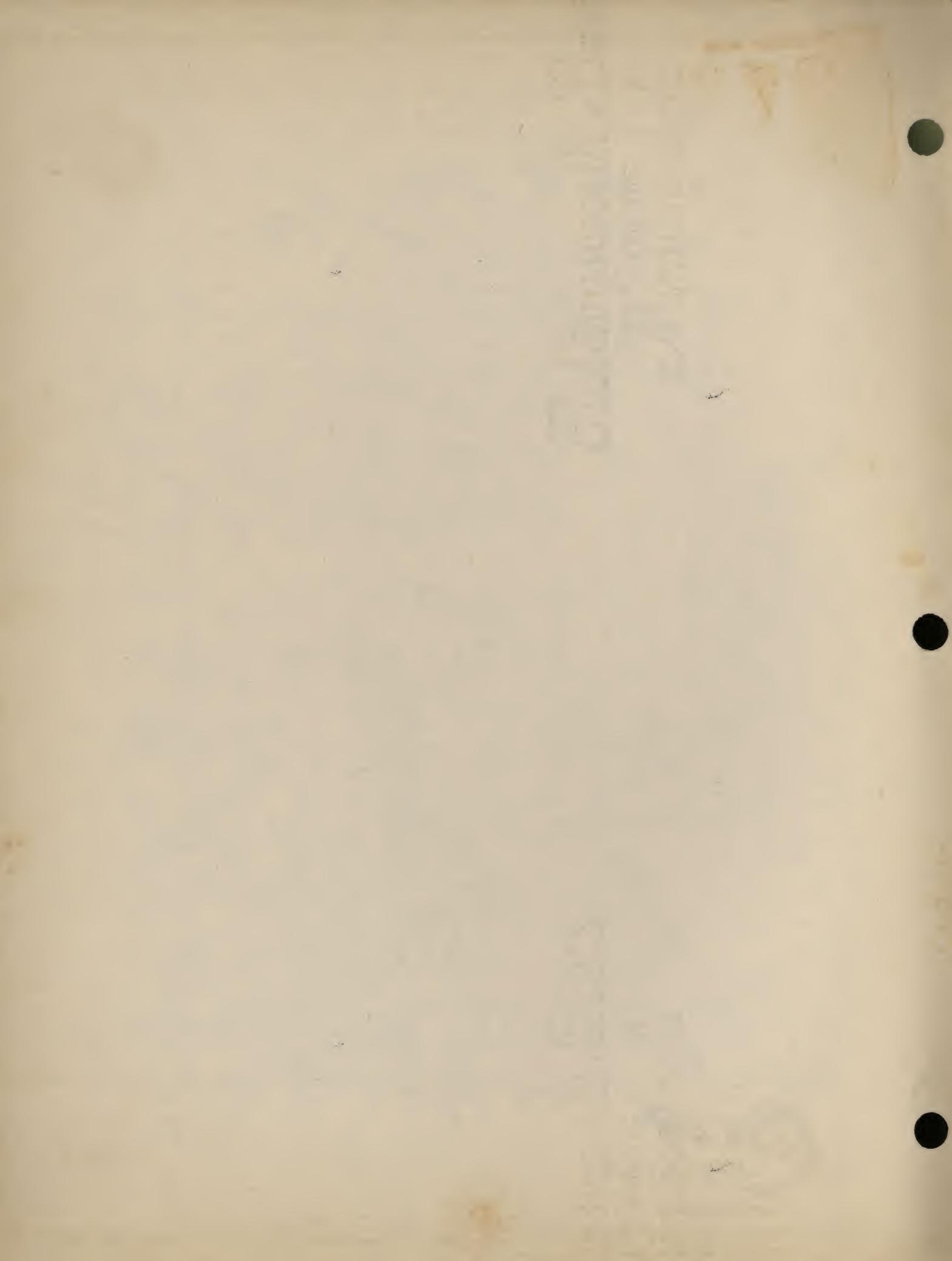
DATE 7-24-36

SUPERSEDING

PAGE

DATE

APPROVED



THINGS TO NOTICE WHEN MAKING THE SURVEY

Data Determined From Outside of House

GENERAL CONDITIONS

- A. Make sketch showing area on the ground of entire home or that part to be insulated. Show cross section of roof area.
- B. Number of stories.
- C. Type of house, #1, #2, or #3. (See page 18 and 19)
- D. Location. Is it far back from the street? Condition of the driveway; will it stand our truck?

E. SIDE WALLS

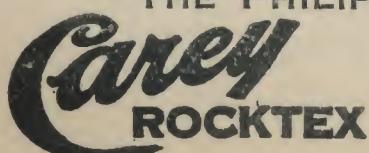
1. Construction - Masonry, Brick, Brick Veneer, Frame, (Stucco, Clapboards, Shingle or Siding).
2. Condition - Cracks, openings, etc. - good, fair, poor.
3. Windows - loose, tight, weatherstripped, caulking.

F. Roof

1. Type of roofing - tile, slate, shingle, composition.
2. Style of roof - slant, hip, high pitched, flat, English or colonial. Are there any flat metal or canvas decks?
3. Dormers, gables or windows either as attic entrance or requiring insulation work.

- #### G. Additions.
- Porches, entryways, sun rooms, or other projections from the main part of the house requiring special openings and corrective work to eliminate drafts and cold floors. Pay special attention to bay windows and similar construction, also rooms over unexcavated areas. (See page 21)

THE PHILIP CAREY COMPANY

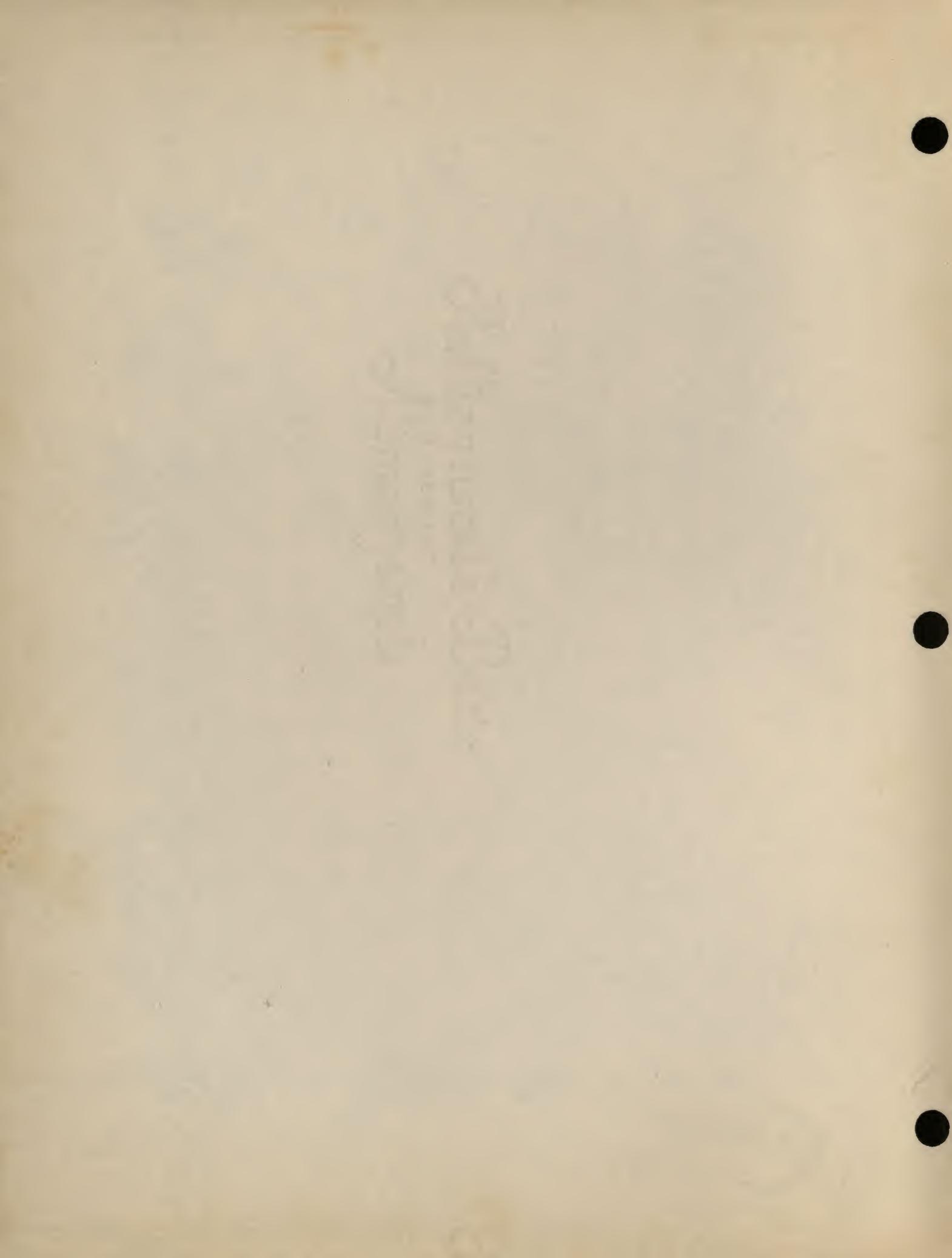


Making the Survey

DEPARTMENT

APPROVED

PAGE	13
DATE	7-24-36
SUPERSIDING	
PAGE	
DATE	



Data Determined From Inside of House

A. BASEMENT

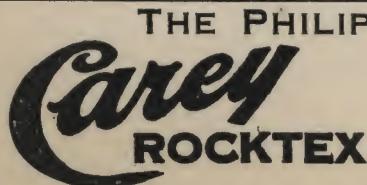
1. Heating plant - steam, vapor, hot water, hot air, Fan circulating system, thermostatic controls, automatic fuel devices, type of fuel and approximate yearly consumption. Humidifier (hot air systems).
2. Side Walls. Are they open to attic and basement or at best only poorly closed?
3. General condition of the basement construction.
4. Air leaks around foundation and basement windows.

B. THIRD FLOOR

1. Is it of the same area as the house or #1 type? Is it floored and type of flooring? Stairway or trap door entrance? Must roof opening be made to gain entrance? Is it a storeroom? Amount and nature of contents.
2. Is it cut up and full of inaccessible corners and wells or #2 type? Will it require many roof openings? Are there openings in side walls where spaces under roof may be reached? Do they prefer that we make such an opening and case it up and close it with a door?

C. INTERIOR DATA

1. General comfort. Which rooms are hot in summer? Rooms that are cold in winter. Drafty floors. Drafts at baseboards. Cold air drafts at sliding doors. Windows that are cold. Cold corners of rooms. Cold drafts from fireplaces. Bathrooms that are cold and have frozen pipes. (See Page 22.)
2. Always look for lath and plaster marks on ceiling and side walls all over the house. They are generally found on every ceiling but where found on a side wall they are especially significant.

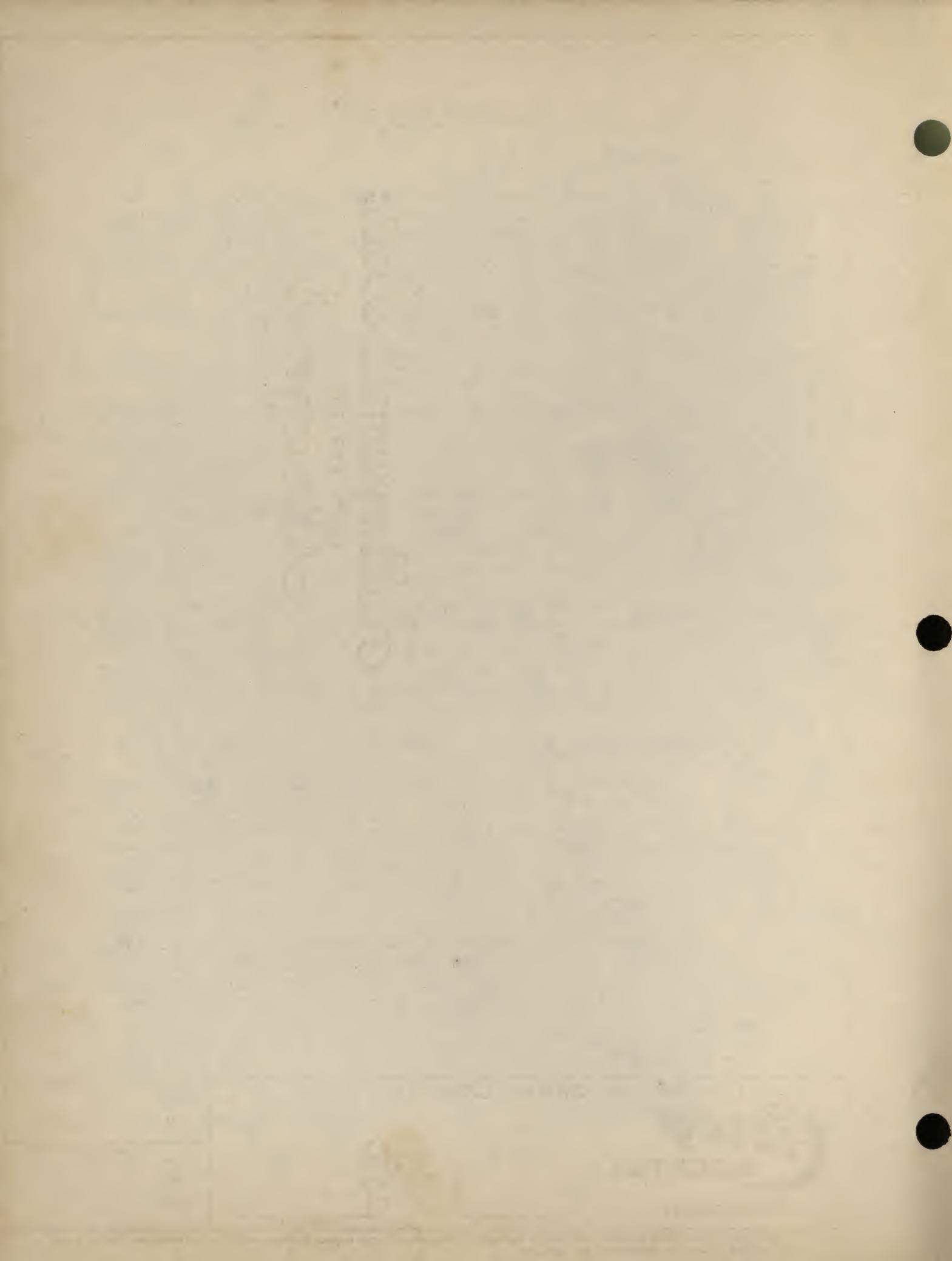


DEPARTMENT

Things to Notice Inside
the House

APPROVED

PAGE	14
DATE	7-24-36
SUPERSIDING	
PAGE	
DATE	



GENERAL TYPES OF HOUSE CONSTRUCTION

(#1) - COLONIAL - TWO-STORY SQUARE HOUSE

This class of construction is usually open and more accessible than any other type. It is rarely found in anything but one or two-story houses. The second story rooms are generally square and full. The roof is slant but may be of hip or straight lines. There are seldom any wells or blind spaces that must be opened and insulated. (See page 18).

(#2) - ENGLISH - STORY AND A HALF, AND TWO AND A HALF STORY AND SQUARE HOUSE

This style of structure may not closely resemble or be strictly the English type of house, but we are using this description for cost estimating purposes. It is practically the same as #1 except for a larger surface of high steep pitch slant roof that always creates many blind spaces and wells, which require numerous openings and insulating, making the operation more expensive (See page 19)

(#3) - SPANISH - SEMI-BUNGALOW TYPE OF HOUSE

This is greatly varied and much chopped up type of construction. It will be found in various styles and all sizes from a semi-bungalow to the most rambling complicated form of construction. It will require considerable labor and material to properly insulate this type of house, and as it is impossible to accurately estimate the cost, there should be a double check survey made of these buildings.

This type is similar to type #2 except that there are many dormers, docks and wings to the house.



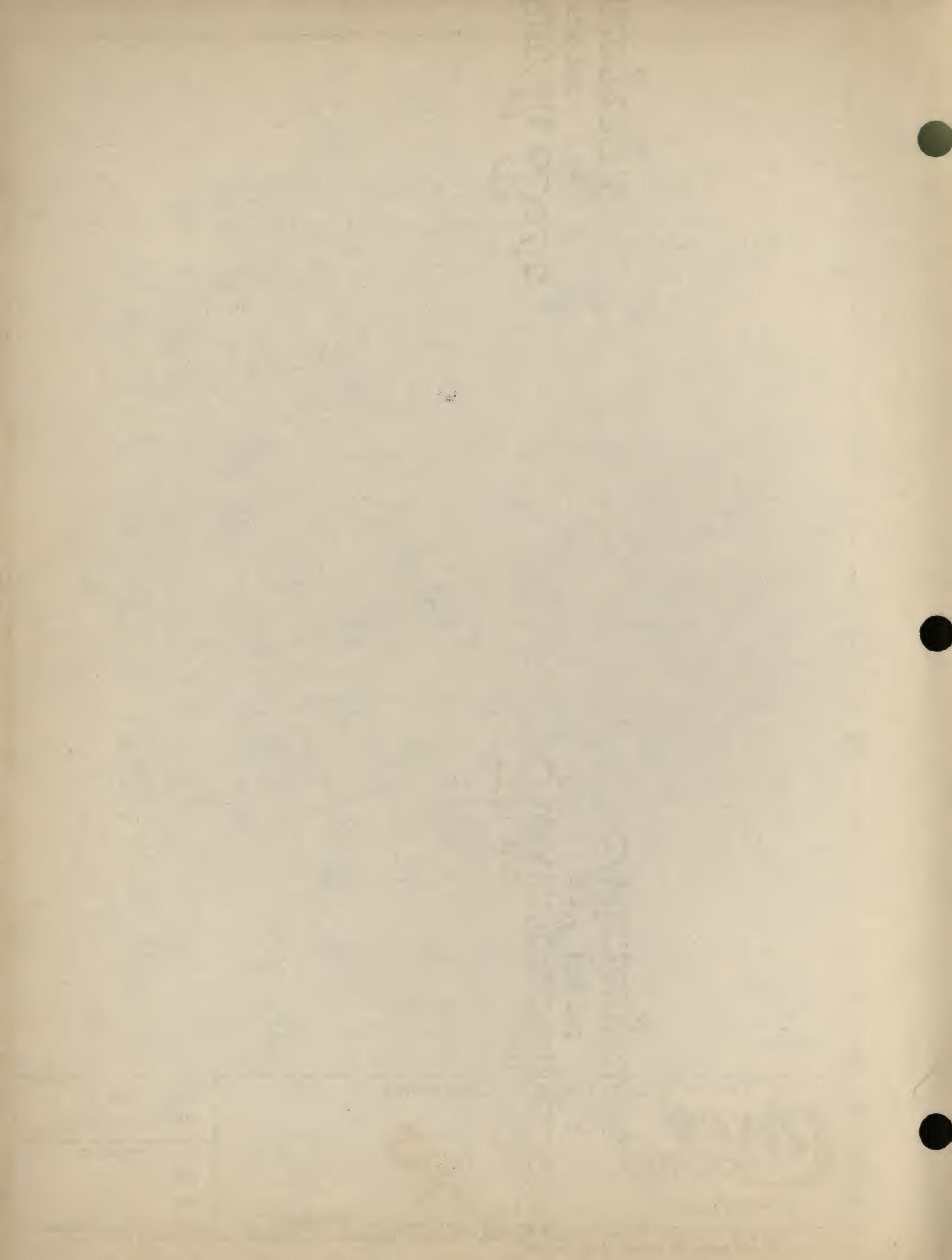
THE PHILIP CAREY COMPANY

Types of House Construction

DEPARTMENT

APPROVED

PAGE	15
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	



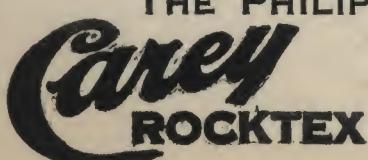
DEFINITION OF TYPES

- A. The #1 type with its open attic construction is a very simple problem. Application of a layer of insulation 4 inches or more in depth on the lath and plaster will reduce the heat transfer to a minimum. If the attic is floored, the entire area must be filled to avoid any blank spaces. (See sketch page 18)
- B. In the #2 type of construction, the required treatment is in the form of a cap. In the case of a finished third floor as an example there are spaces beyond the side walls that are in reality exposed second floor ceilings. These spaces must be covered to prevent heat escaping upward from the second floor in winter and down from the roof in summer. The vertical side walls of the third floor rooms are generally lath and plaster over the studding. There isn't any board construction to prevent heat losses and convection currents. The heat transfer through this type of construction is very rapid and if any degree of efficiency is to be attained, the wall must be backed with insulation held in place with some form of retaining structure. At the junction of these side walls and the second floor ceilings we have an opening that requires special attention. This space between joists must be closed. If it is left open, heat losses through the ceilings pass up and out through the roof. If it is closed, the heat is confined and acts to warm the floor.

The ceiling space of these third floor rooms must be covered to reduce their factor of heat transmission. The slanting ceiling or side walls of this type of construction also transmit a great amount of heat, but the very nature of the construction makes it difficult, if not impossible, to insulate with any given depth. The only solution to such a problem is to fill these spaces full of insulation, thus blocking heat passages in either direction. (See sketch Page 19)

There are a number of cases where special attention must be given to the unusual factors in house construction that require our special services. Some of these are indicated in the paragraphs under "House Construction" and their treatment will be indicated in sketches, which follow.

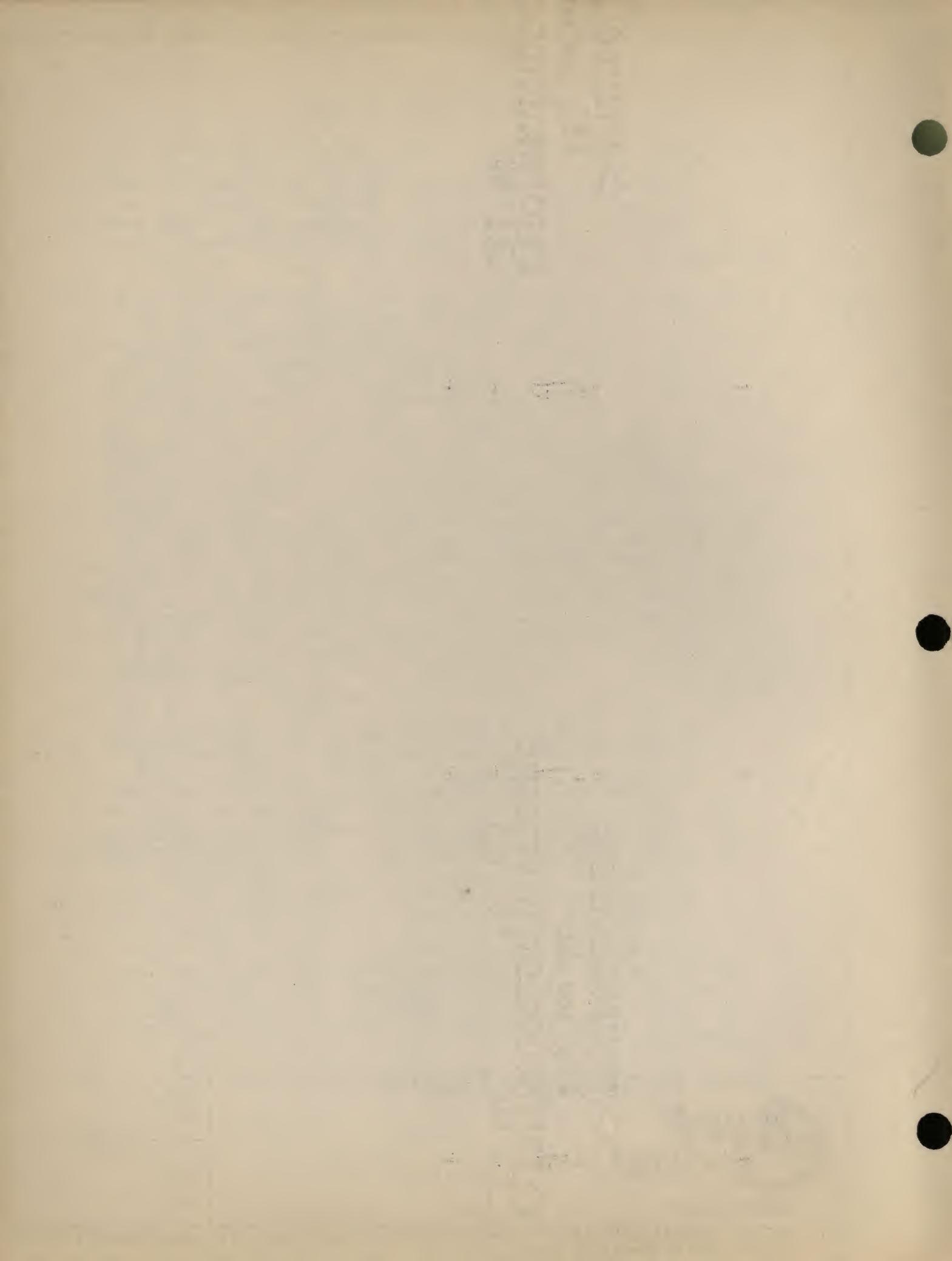
THE PHILIP CAREY COMPANY



DEPARTMENT

Definition of Types of
Construction

PAGE	16
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	



CONSTRUCTION DEFECTS

Perhaps one of the worst offenders is the open side wall construction. In a great many cases the upper plate construction has been omitted on parts of the house. Such construction can very often be predicted in cases where a direct examination is impossible without making costly openings.

Lath and plaster allow heat to pass through quite freely. With an open side wall this rapid heat transmission is carried up to pass out through the roof, thus converting the side walls into flues. To take the place of the heated air that is passing upward, a corresponding amount of cold air passes down through the walls. The detection of such a condition is usually quite simple. The heat in passing out through the lath and plaster leaves lath marks. A little experience and you will soon be able to notice this detail and predict accordingly.

Another means of detecting this type of construction is by looking for drafty conditions around the baseboards of the rooms. This may not always indicate open wall construction but is an aid to determining the existing conditions, which occasionally we find in a house with open bottom wall. This can be seen from the basement and the remedy is simple. It requires the closing of an opening with insulation to stop drafts.

There is another very common and bad condition to be frequently found in the side of the house where porches, sun rooms, entryways, bay windows and false cornices are built on. It will be very frequently found, that the sheeting only extends below the roof and there is a wide open space between the rafters and the ceiling joists, which permits air currents to enter between the shingles and causes up and down drafts in the side walls and under the floors.

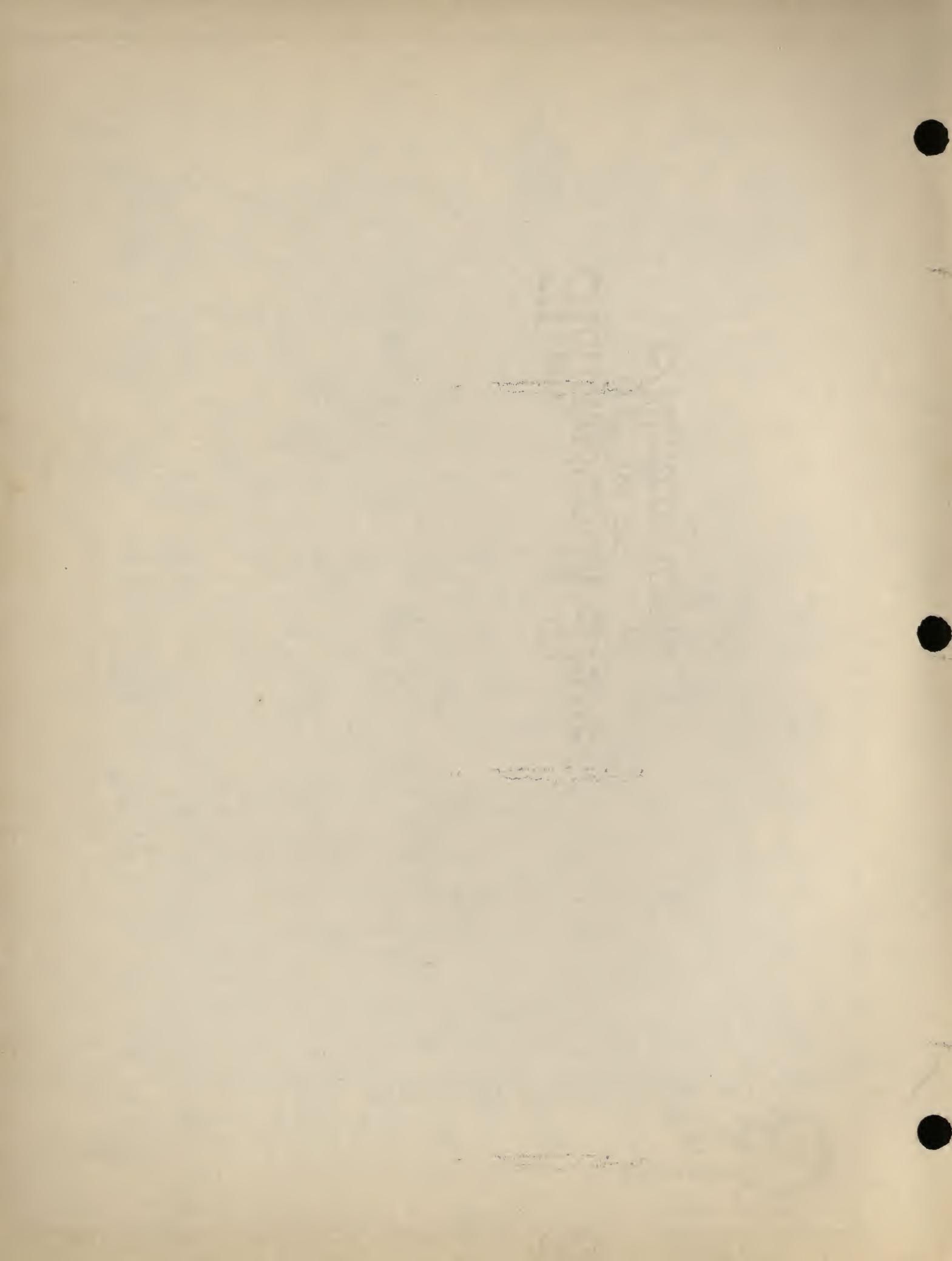


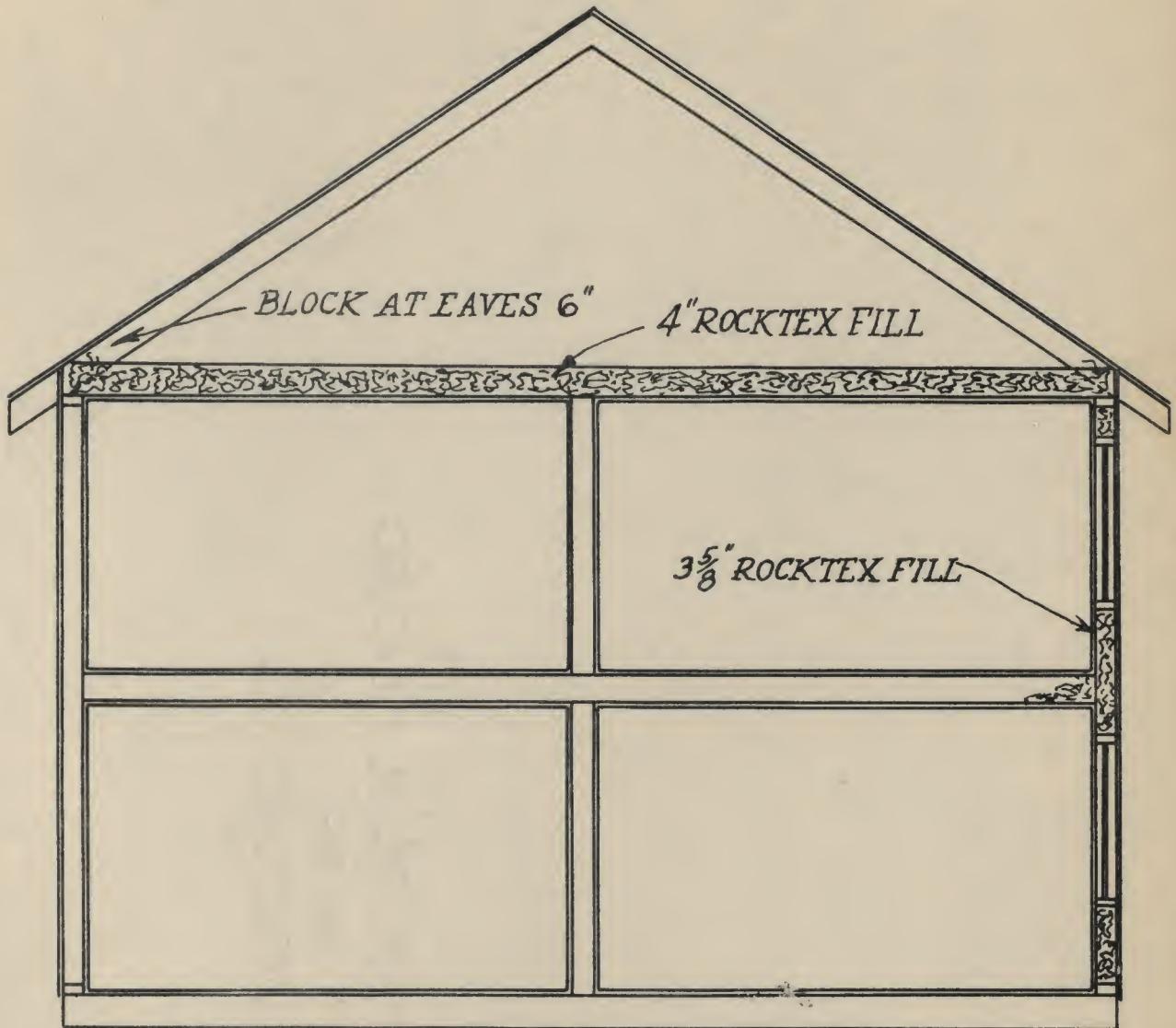
DEPARTMENT

Construction Defects

APPROVED

PAGE	17
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	





METHOD OF APPLICATION OF INSULATION IN HOME
WITH UNFINISHED UPPER FLOOR OR ATTIC

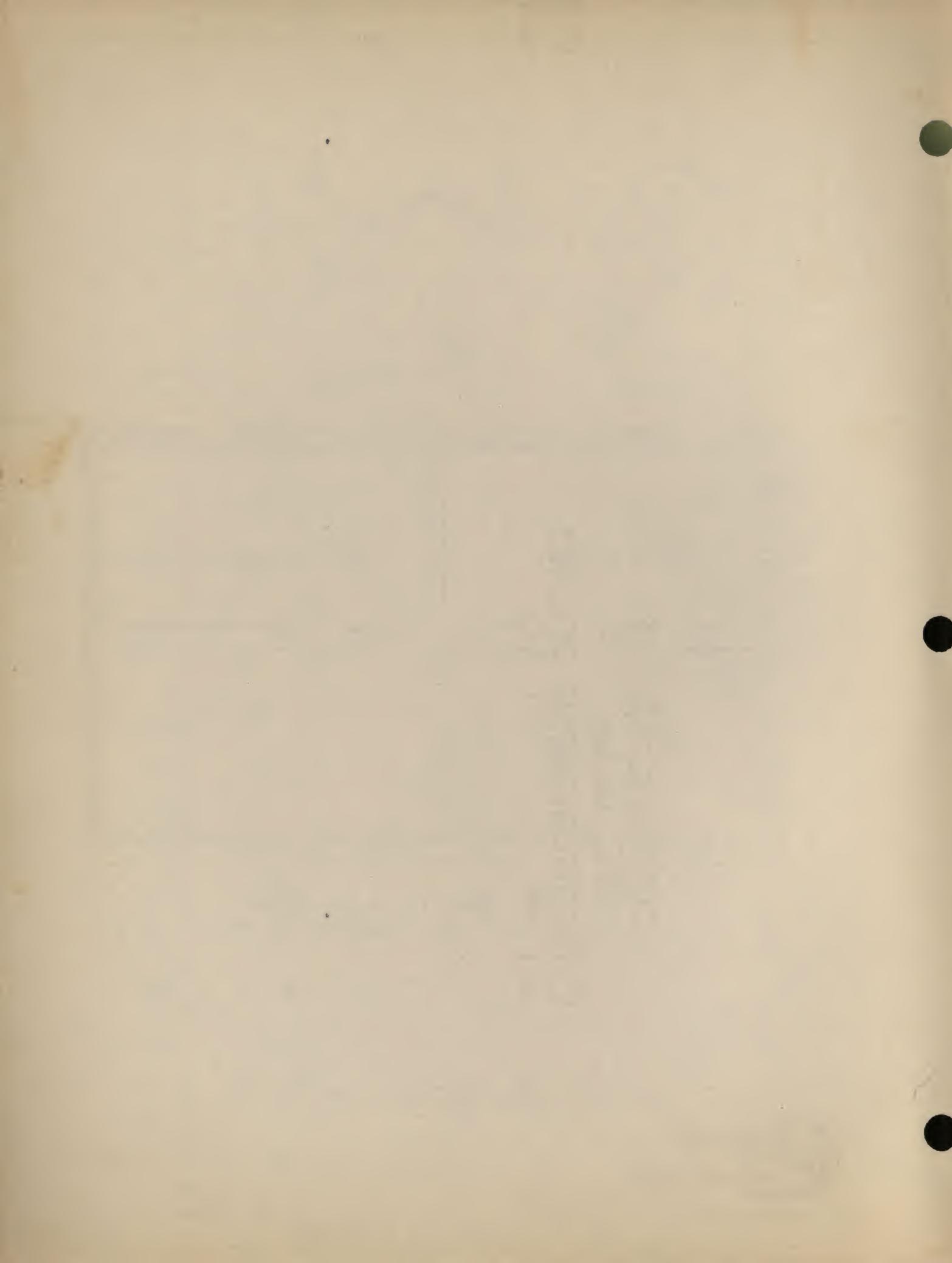
THE PHILIP CAREY COMPANY

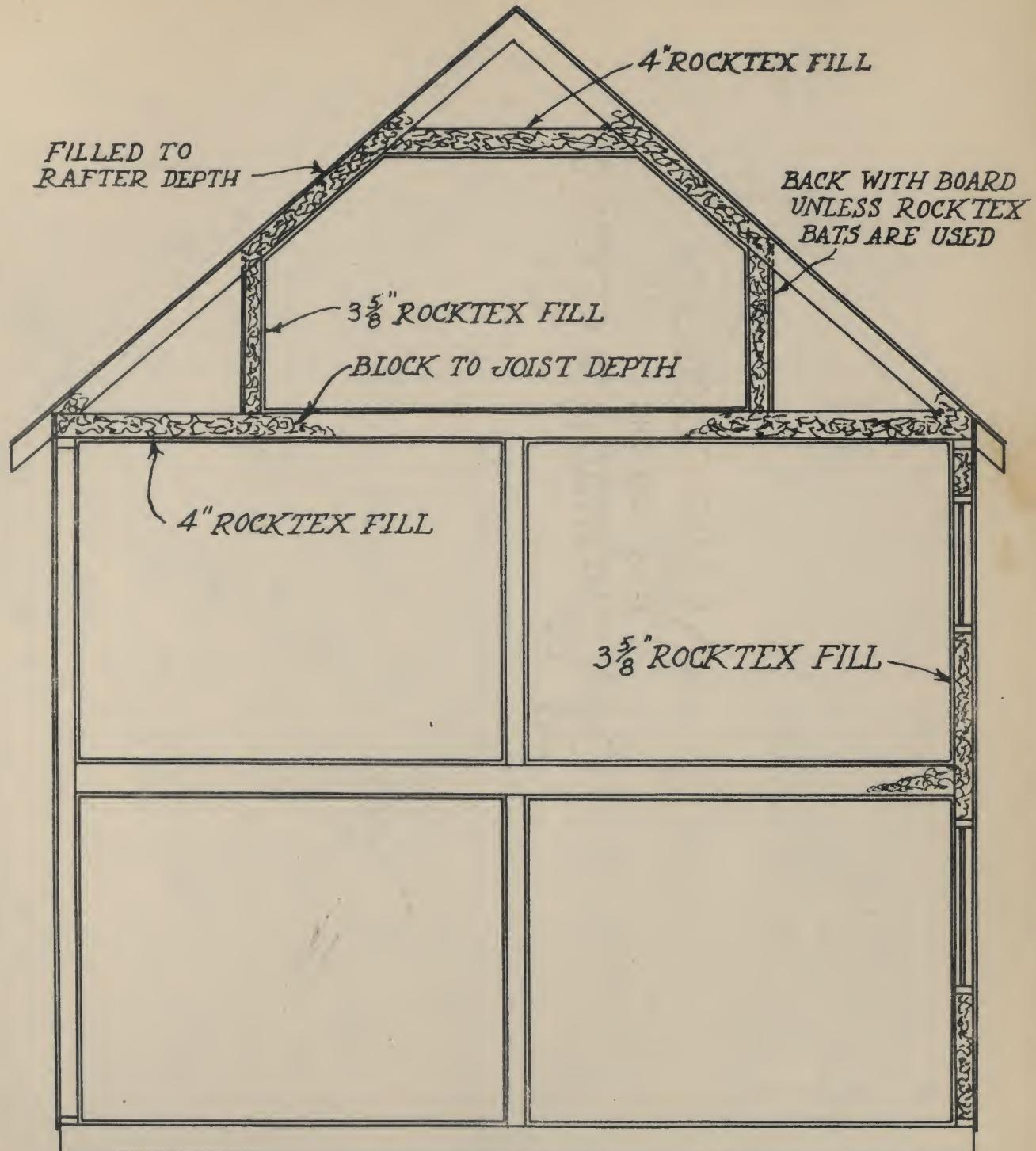
Carey
ROCKTEX
DEPARTMENT

METHOD OF INSULATING HOME
WITH UNFINISHED ATTIC

Gill

PAGE	18
DATE	7-20-36
SUPERSEDED	
PAGE	
DATE	





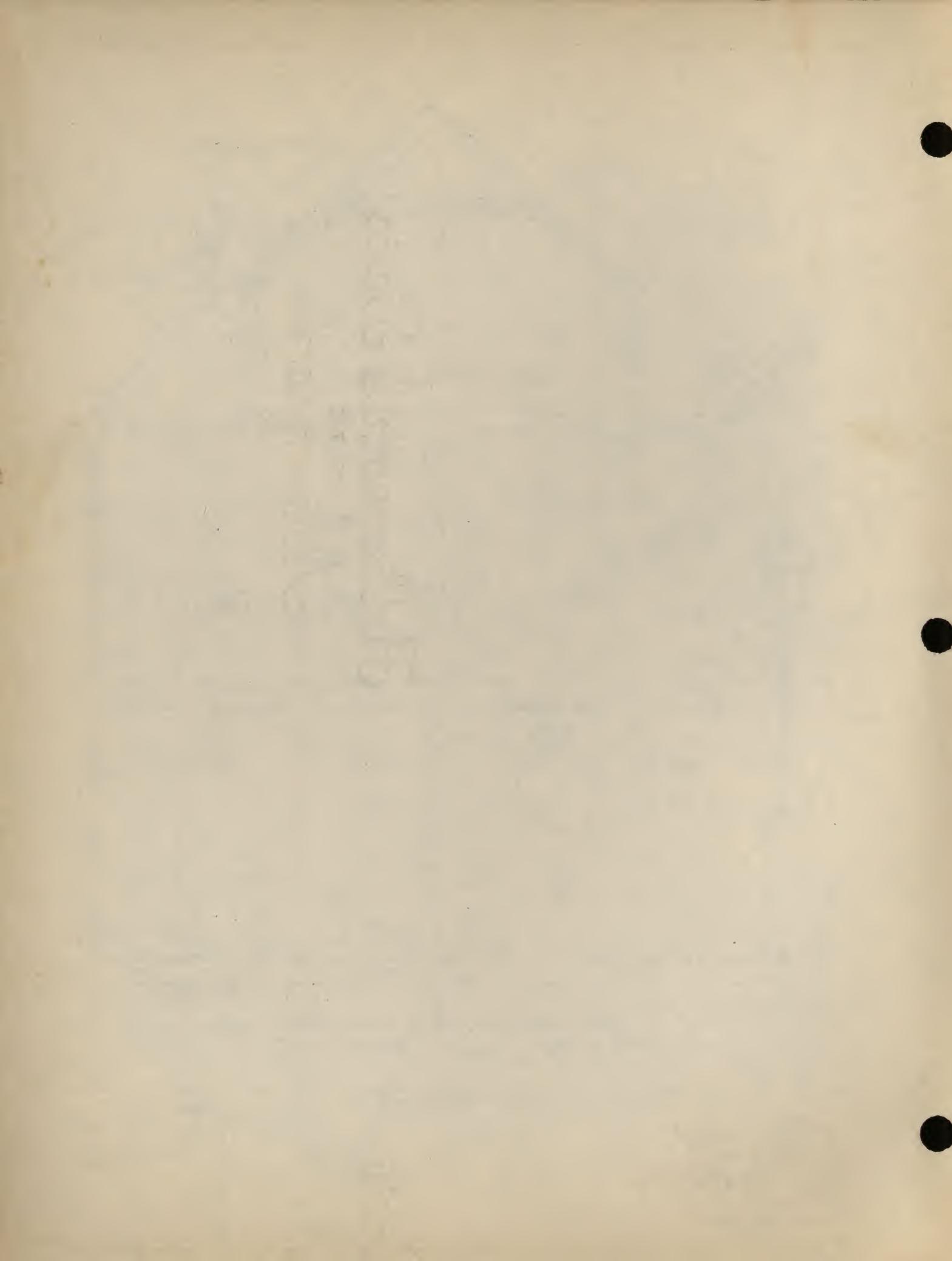
METHOD OF APPLICATION OF INSULATION IN HOME
THIRD FLOOR FINISHED

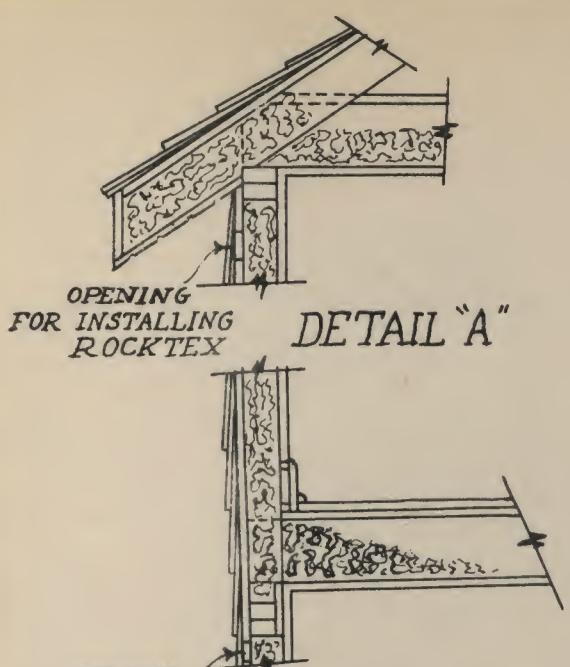
THE PHILIP CAREY COMPANY
Carey
ROCKTEX
DEPARTMENT

INSULATING HOME WITH
FINISHED THIRD FLOOR

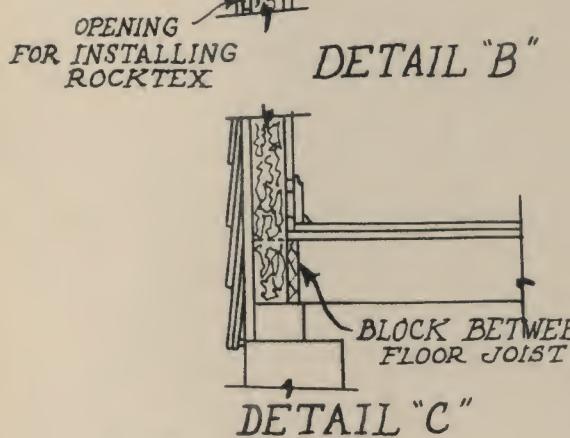
G.W.C.

PAGE	19
DATE	7-20-36
SUPERSEDING	
PAGE	
DATE	

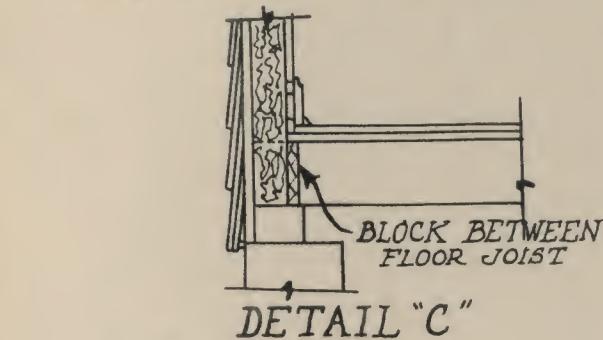




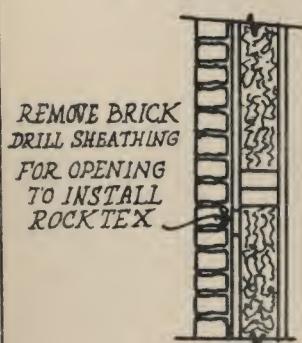
DETAIL "A"



DETAIL "B"



DETAIL "C"

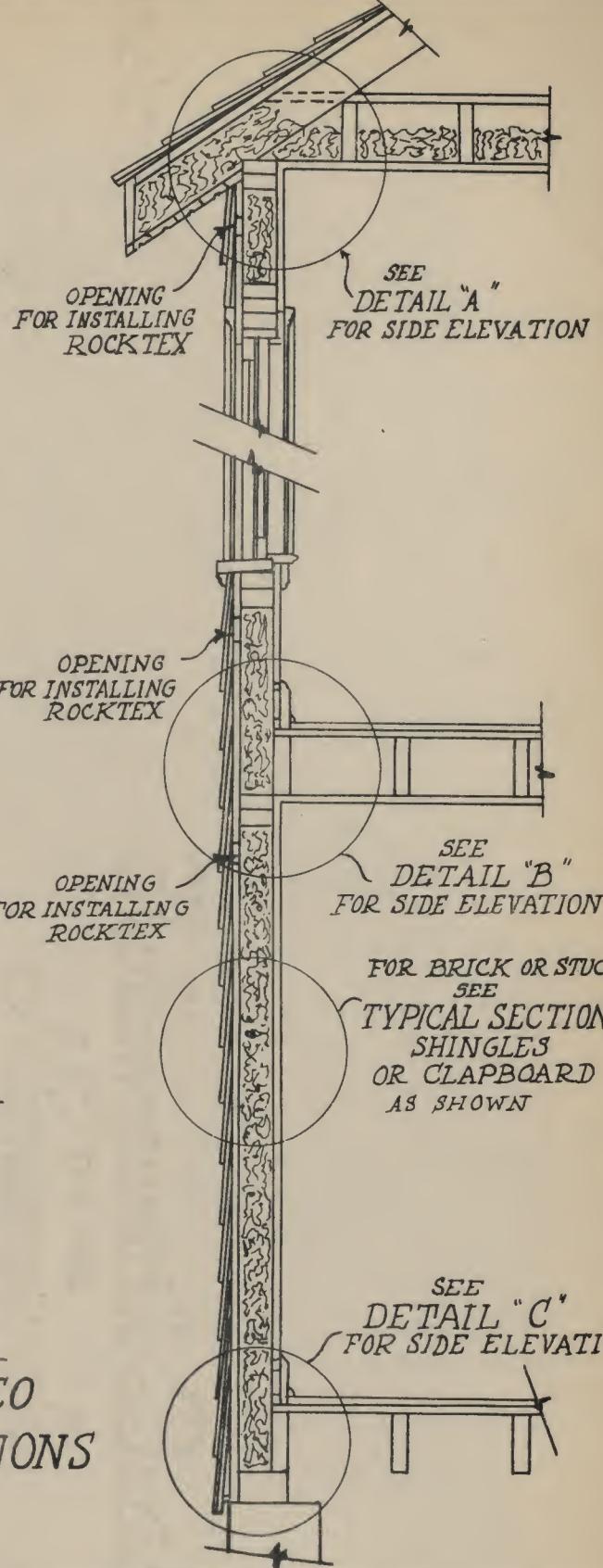


BRICK
TYPICAL WALL SECTIONS

DRILL HOLE IN STUCCO
DRILL HOLE IN STUCCO
AND SHEATHING
FOR OPENING
TO INSTALL
ROCKTEX



STUCCO



PAGE 20
DATE 7-20-36

SUPERSEDING

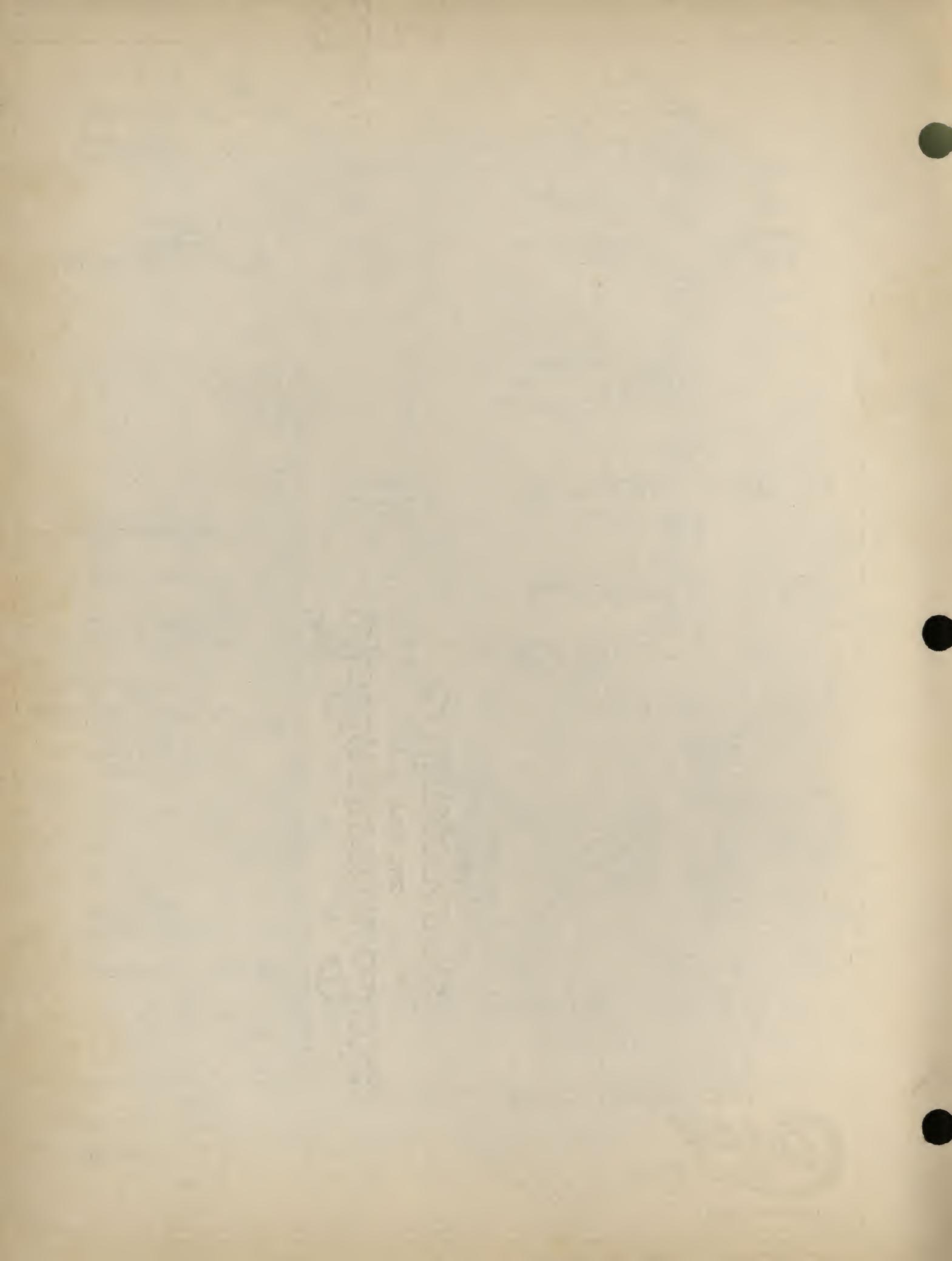
PAGE
DATE

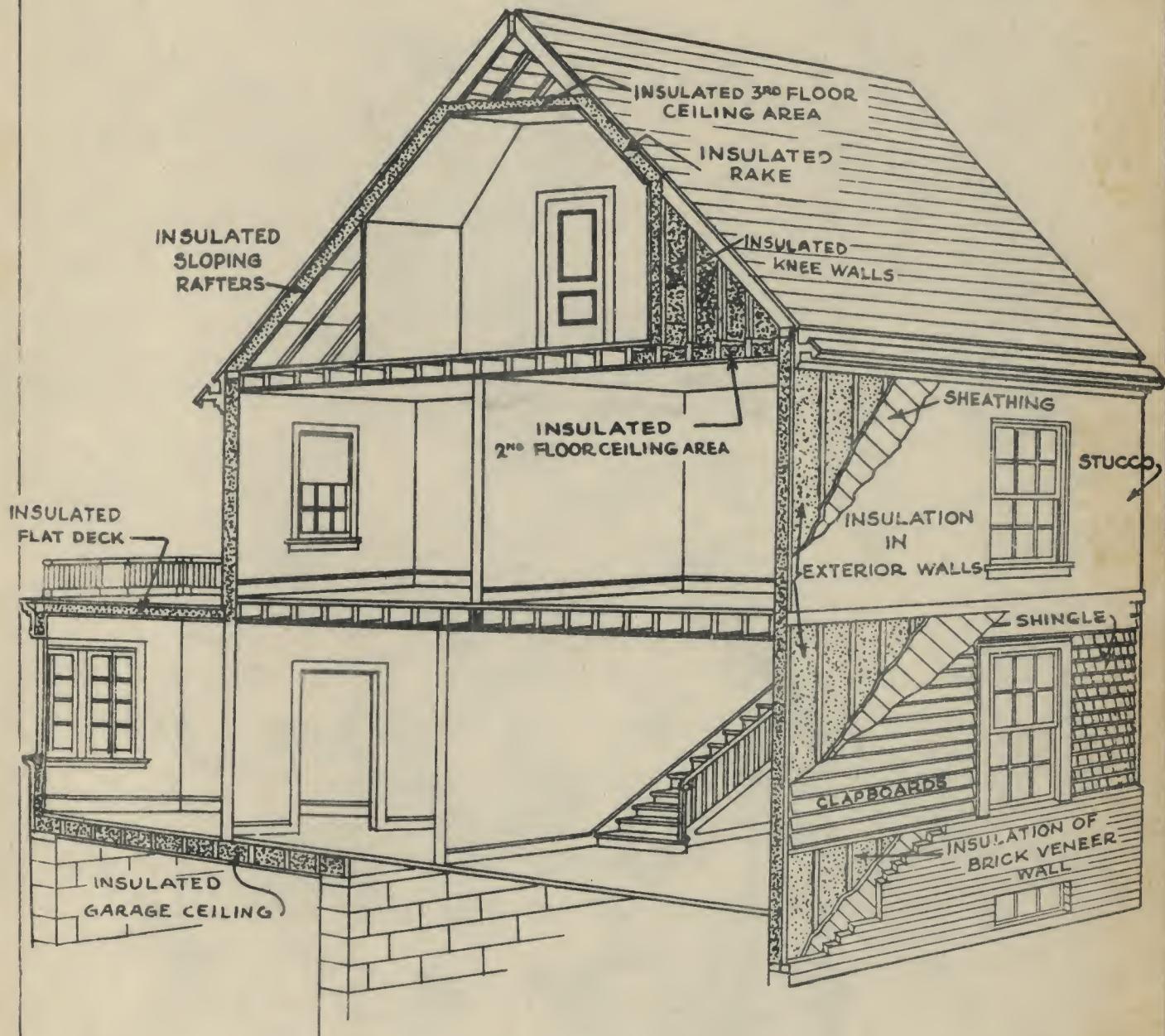
THE PHILIP CAREY COMPANY
Carey
ROCKTEX
DEPARTMENT

DETAILS OF TYPICAL
WALL SECTIONS

GOL

APPROVED





THE PHILIP CAREY COMPANY

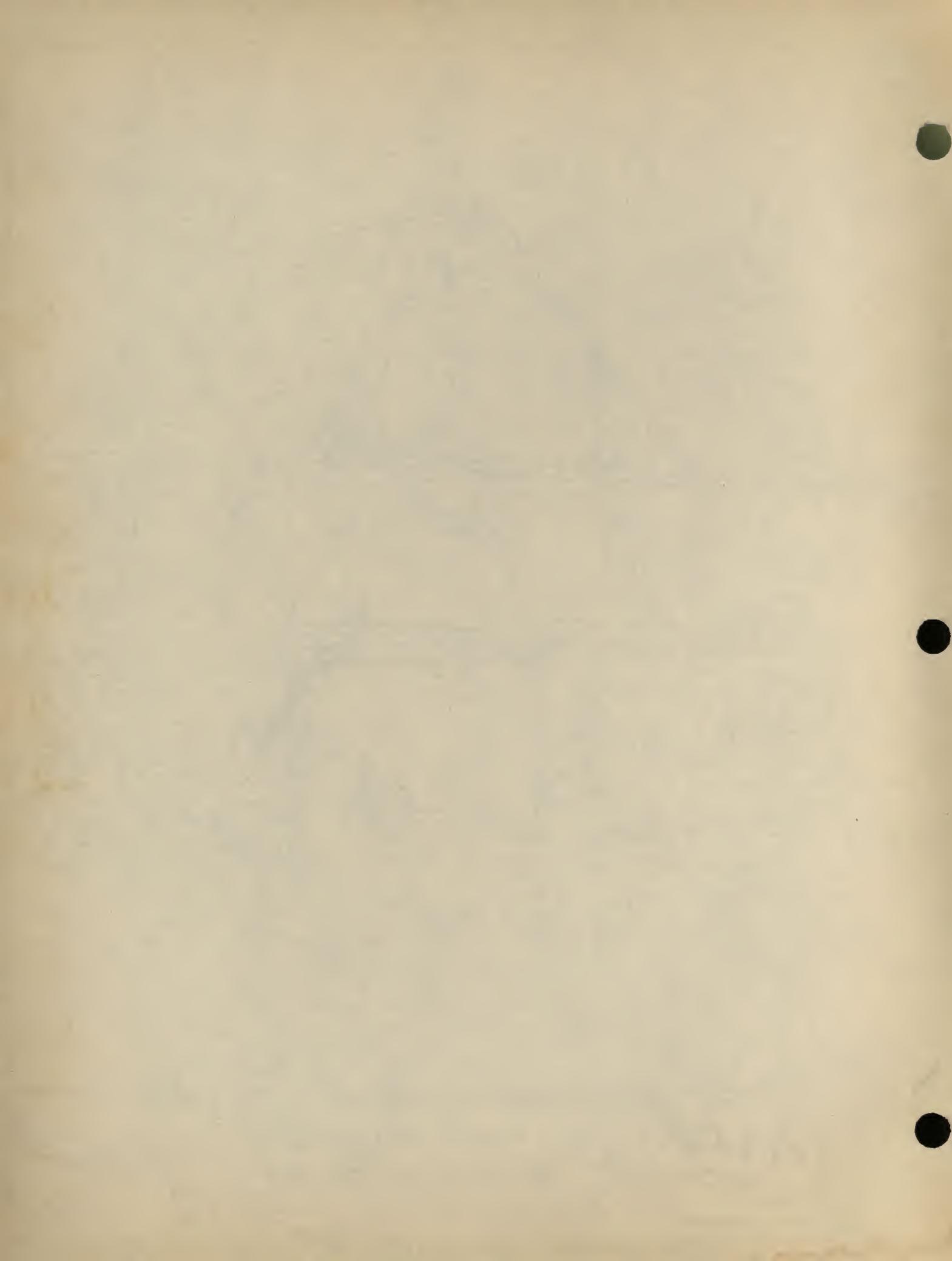
Carey
ROCKTEX

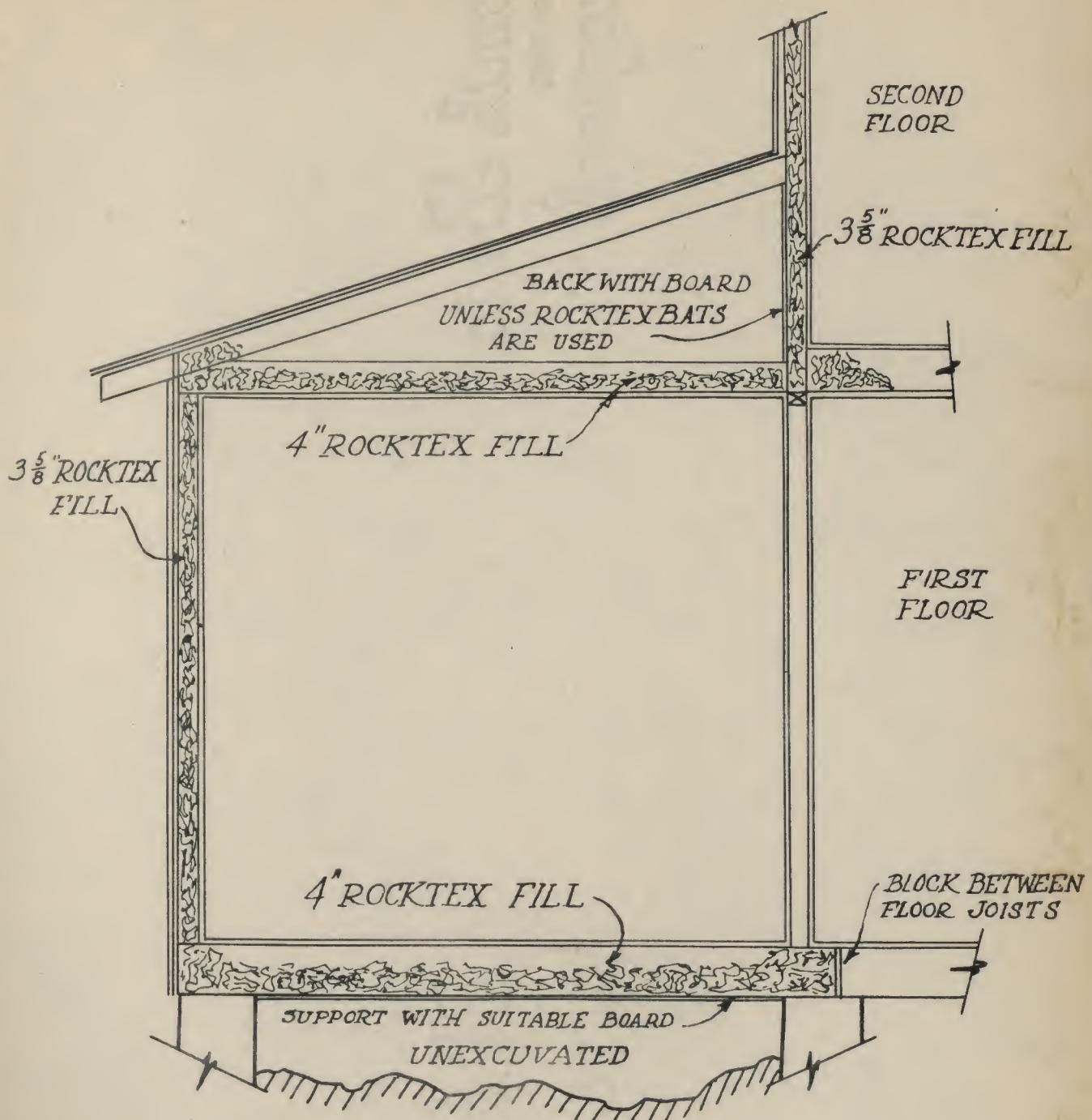
DEPARTMENT

WHERE ROCKTEX SHOULD

BE INSTALLED IN THE HOME

PAGE	20-1
DATE	11-15-37
SUPERSEDING	
PAGE	
DATE	





METHOD OF APPLICATION OF INSULATION IN HOME
SUN ROOM OVER UNEXCAVATED AREA

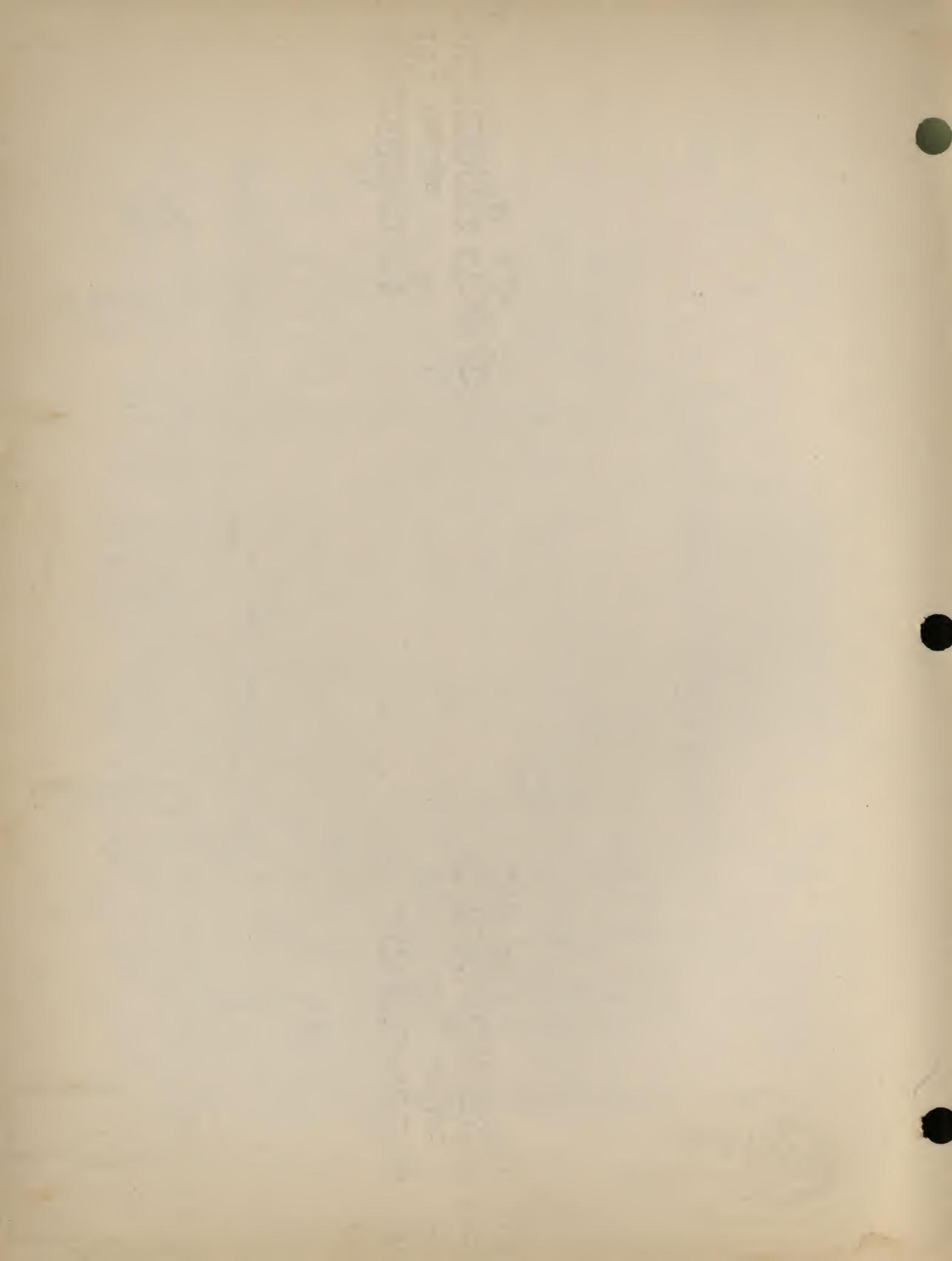
THE PHILIP CAREY COMPANY
Carey
ROCKTEX
DEPARTMENT

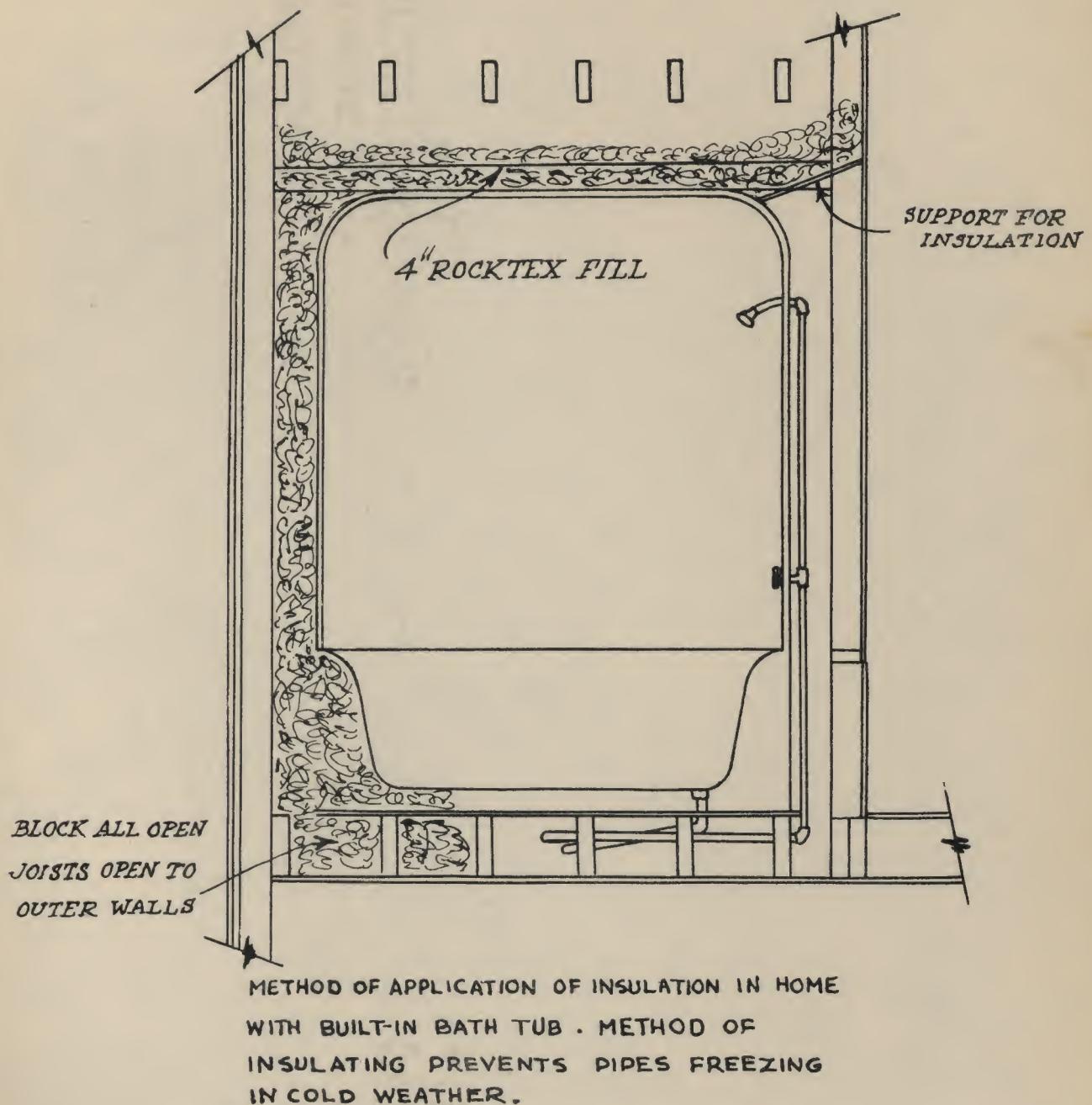
METHOD OF INSULATING ROOMS
OVER UNEXCAVATED AREA

[Signature]

APPROVED

PAGE	21
DATE	7-20-36
SUPERSEDING	
PAGE	
DATE	





THE PHILIP CAREY COMPANY

Carey
ROCKTEX
DEPARTMENT

METHOD OF INSULATING
BUILT-IN BATHTUB

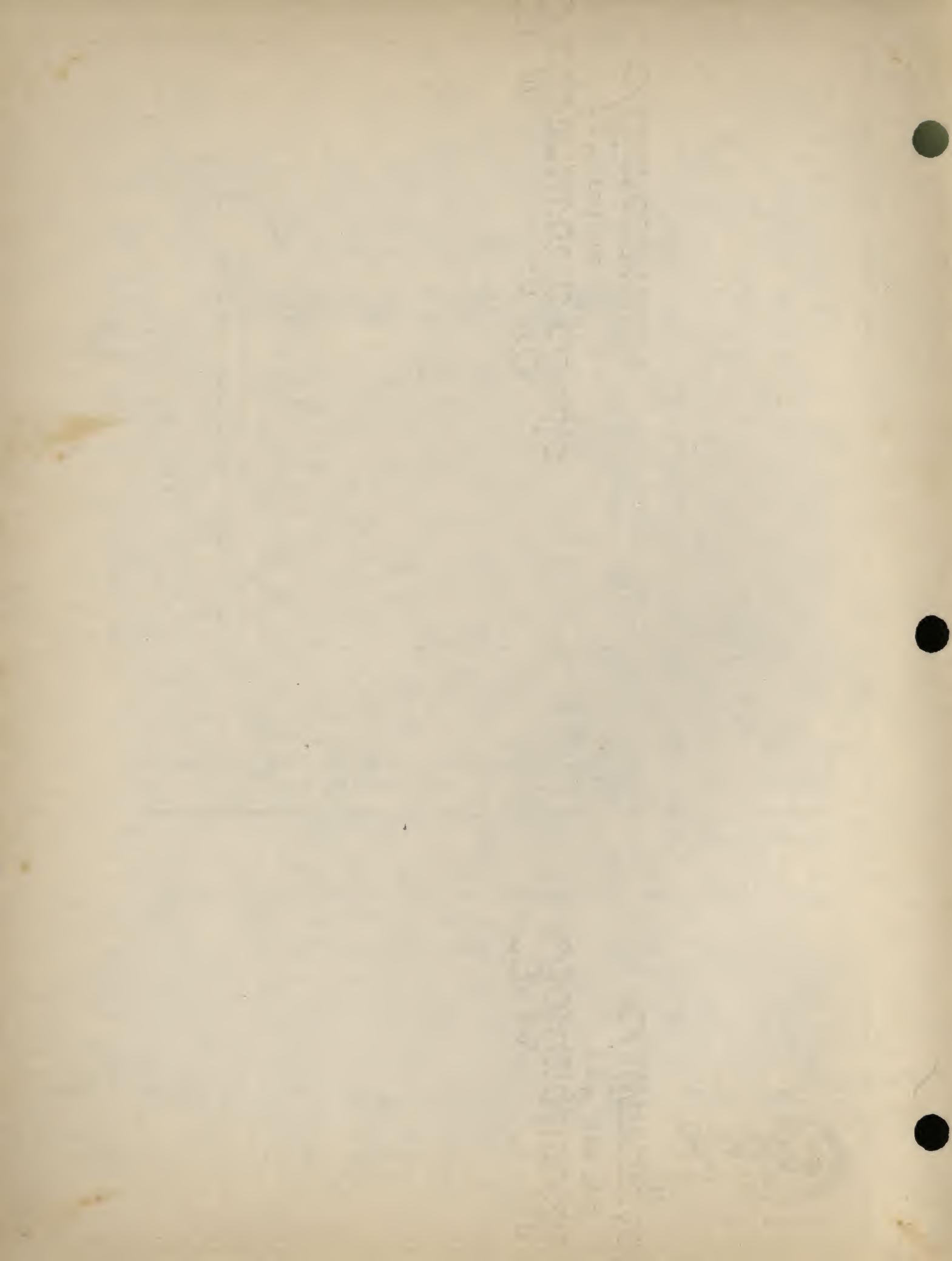
G.L.C.

PAGE 22
DATE 7-20-36

SUPERSEDING

PAGE
DATE

APPROVED



TECHNICAL DATA

Definitions -

Heat -

Heat has long been known to be a form of energy and not substance. Modern theories of heat are that it is a motion of the molecules of which every body is composed. Every substance contains some heat and to say that a body is "cold" simply means that it has a very small amount of heat or molecular action.

Measurement -

In measuring heat, we deal with two quantities; the intensity and amount. A small piece of hot metal may contain as much heat as a body of warm water, the difference being the intensity of the former. The measurement of intensity is usually based upon an arbitrary scale such as centigrade or fahrenheit thermometers.

British Thermal Unit -

The unit of heat used in modern engineering practice is the amount needed to raise the temperature of one pound of water one degree fahrenheit. This is called the British Thermal Unit and is designated by the symbol B.T.U.

Conductivity Factor -

The thermal conductivity of a material is the rate of heat flow through the material under steady conditions, expressed in B.T.H. per hour, per square foot and per degree fahrenheit temperature difference per inch in direction perpendicular to the area. Designation - (k).

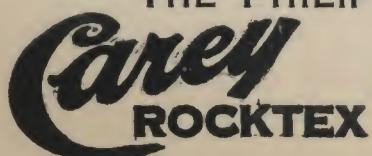
Resistivity Factor -

Resistivity of a material is the reciprocal of its conductivity, thus being the temperature difference per inch of thickness necessary to make one B.T.U. flow by conduction through one square foot of area of the material. Designation - $\frac{(I)}{(K)}$

Transmittance -

Transmittance is the overall coefficient of heat transfer through a body consisting of several layers of material, or a homogeneous body with account

THE PHILIP CAREY COMPANY

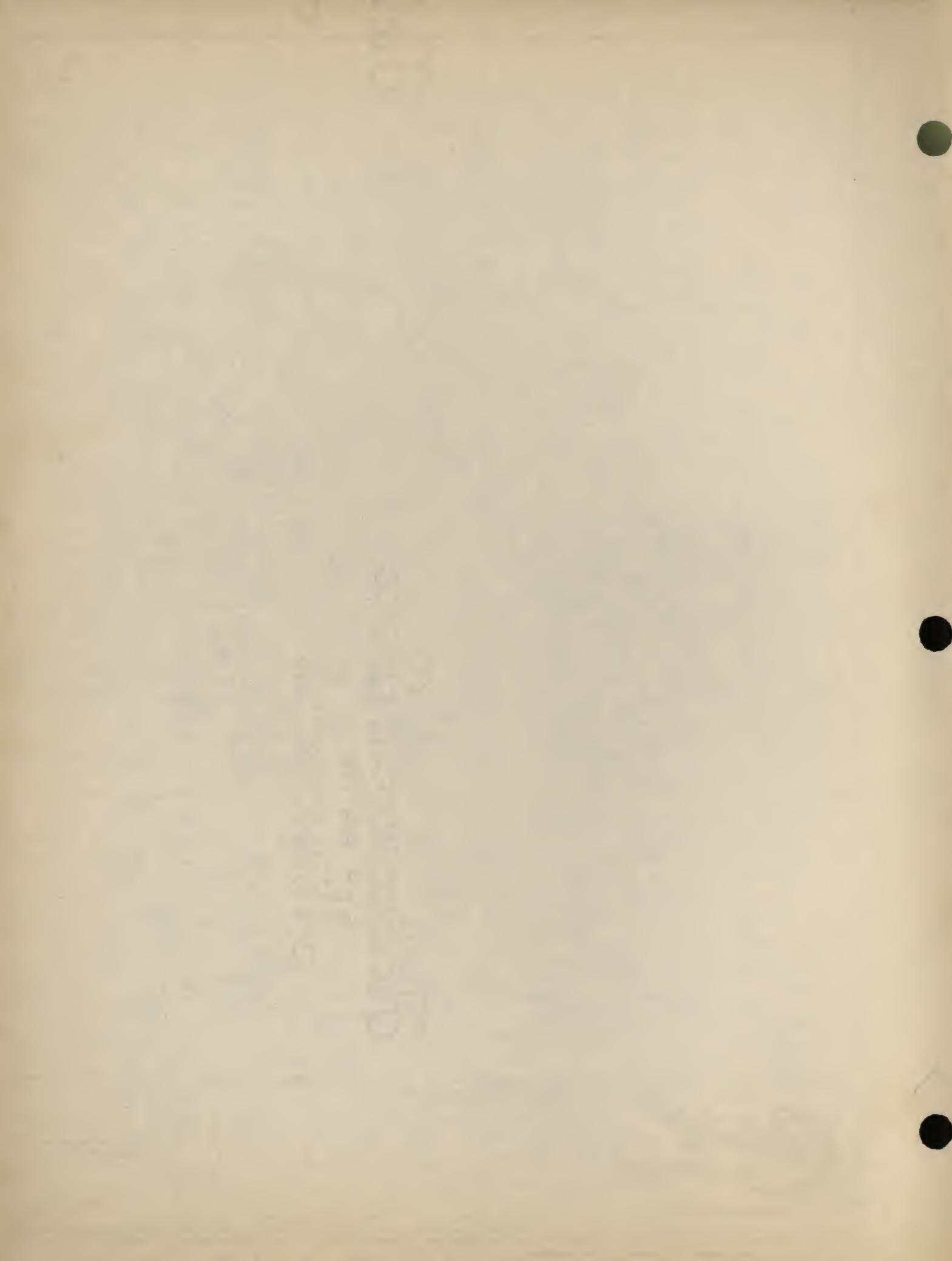


DEPARTMENT

Technical Data

PAGE	23
DATE	7-24-36
SUPERSEDED	
PAGE	

APPROVED



Convection (Cont'd)-

The hot body by conduction from its surface to the fluid in contact with it. An example of this process is the transference of heat from the warm air of a room to the cold outside walls. The air, upon giving up its heat, increases in density, and falls, giving place to warmer air from above and producing a continuous downward current.

Reflectivity -

The reflectivity of a surface is the fraction of radiant energy, incident on the surface, which is reflected.

Absorptivity -

The absorptivity of a surface is the fraction of radiant energy, incident on the surface, which is absorbed and is numerically equal to its emissivity at the same temperature.

Black Body -

A Black Body is a surface which absorbs all the radiation which falls on it and reflects, transmits and scatters none. There are no perfectly black surfaces in nature, but this concept gives a standard for comparing the absorptivities and emissivities of actual surfaces.

Emissivity -

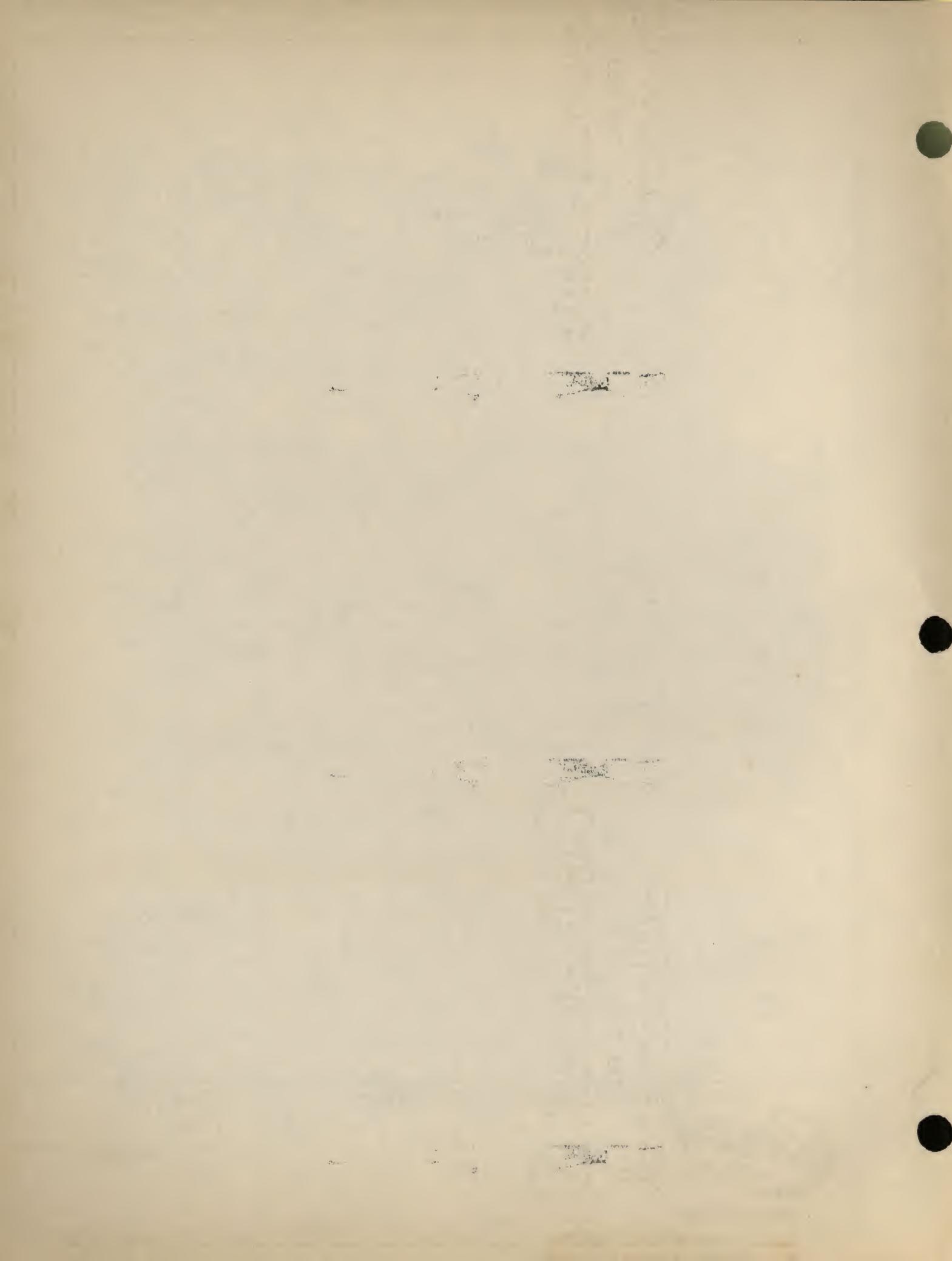
The emissivity of a surface is the ratio of its emissive power to that of a black body.



DEPARTMENT

Technical Data

PAGE	25
DATE	7-24-36
SUPERSEDEDING	
PAGE	
DATE	



■ WITH CAREY ROCKTEX INSULATING WOOL 4" THICK
YOU GET INSULATING EFFICIENCY EQUAL TO A SOLID
WALL OF:

■ 4.44" OF PURE CORKBOARD

■ 5" OF CELOTEX

■ 5" OF INSULITE

■ 7.4" OF INSULATING BLOCK

59" (ALMOST 5 FEET) OF SOLID BRICK

89" OF SOLID CONCRETE

208.5" OF SOLID MARBLE

THE PHIL
Carey
ROCKTEX
DEPARTMENT

THE PHILIP CAREY COMPANY

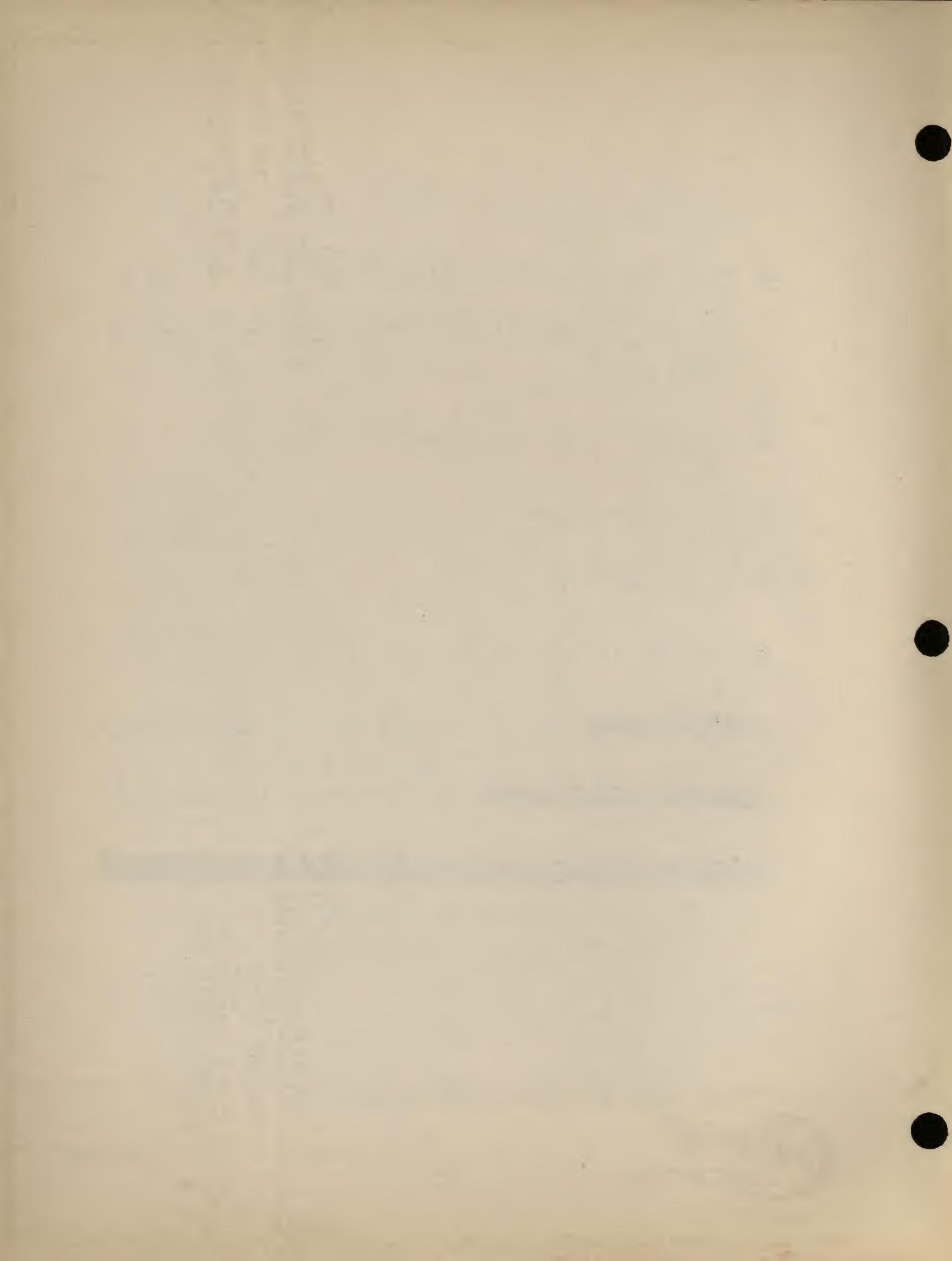
COMPARING ROCKTEX EFFICIENCY

802

APPROVED

PAGE 26
DATE 7-20-36

SUPERSEDING
PAGE
DATE

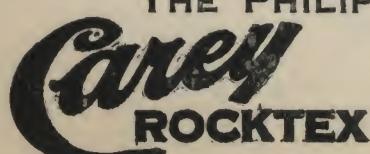


THERMAL CONDUCTIVITY OF VARIOUS INSULATING MATERIALS.

MATERIAL	WEIGHT POUNDS PER CU. FT.	CONDUC- TIVITY MEAN TEMP.	CONDUC- TIVITY MEAN TEMP.	AUTHORITY
Carey Rocktex Loose Fibre 6	.275	.381	Mellon Institute	
Carey Rocktex Loose Fibre 8	.276	.375	"	
Carey Rocktex Loose Fibre 10	.278	.357	"	
Carey Rocktex Loose Fibre 12	.286	.340	"	
U.S.G. Glass Wool -				
Loose Fibre	1.5	.375	.522	"
Rock Wool Granulated	8.5	.284	.410	"
Rock Wool Granulated	14	.318	.412	"
U.S.G. Thermofill	29	.375	.402	"
		MEAN TEMP. <u>90° F.</u>		
Balsom Wool	2.2	.27	U. S. Bureau of Std.	
Celetex	13.2	.34	"	
Corkboard (pure)	7	.27	"	
Corkboard (pure)	10.6	.30	"	
Corkboard (pure)	14	.34	"	
Flaxlinum	13	.31	"	
		MEAN TEMP. <u>80° F.</u>		
Carey Rocktex Loose Fibre 7.5	.263	Pitts. Test. Lab.		

NOTE: Conductivity is expressed in B.T.U. per hour, per square foot, per 1 degree F., per 1 inch thickness

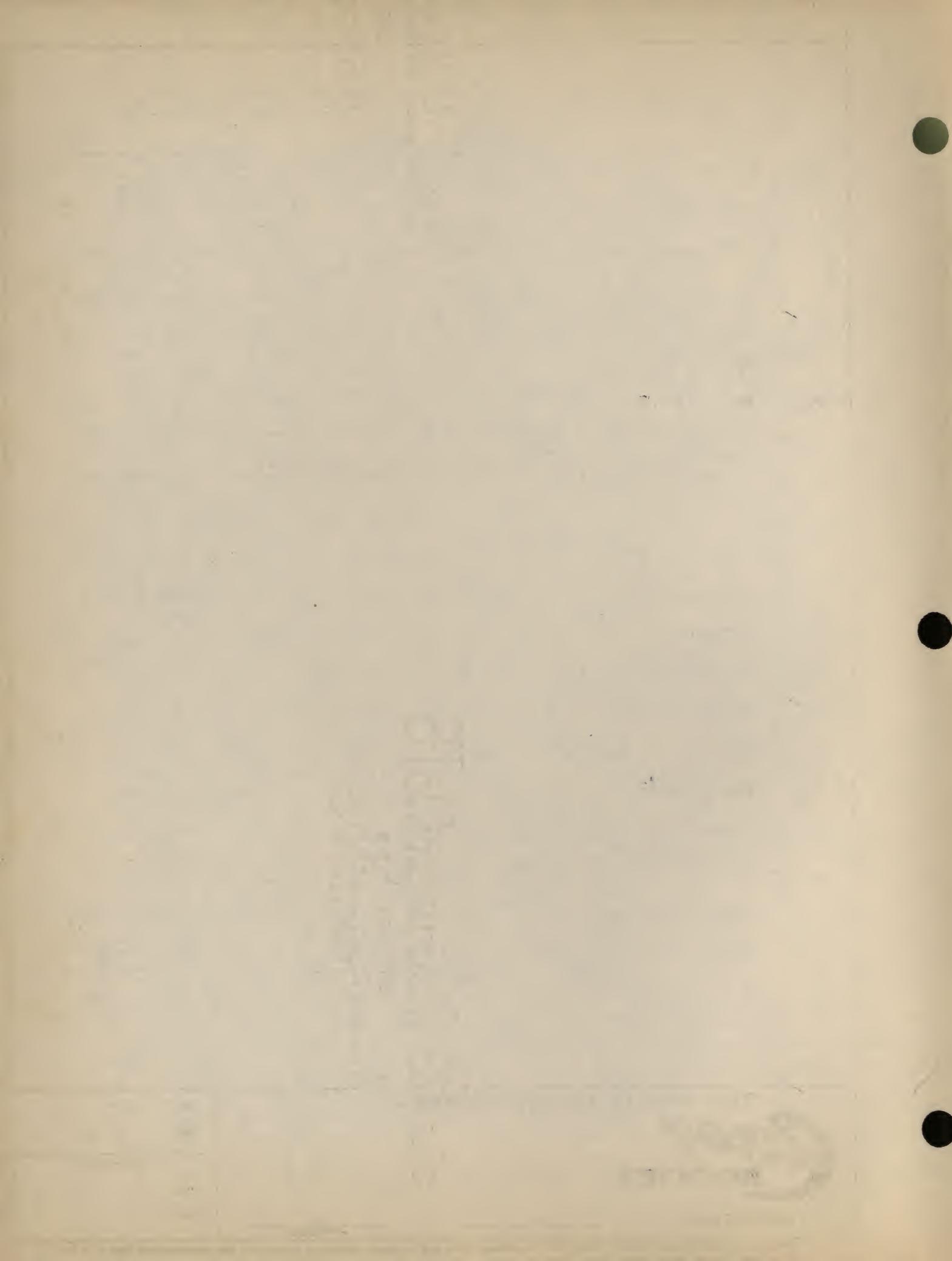
THE PHILIP CAREY COMPANY



DEPARTMENT

Thermal Conductivities of
Various Materials

PAGE	27
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	



MELLON INSTITUTE OF INDUSTRIAL RESEARCH

UNIVERSITY OF PITTSBURGH

SPECIAL REPORT

#155

on

PHYSICAL AND THERMAL CHARACTERISTICS OF CAREY ROCKTEX WOOL

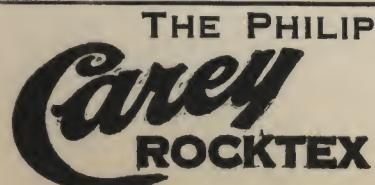
The Philip Carey Company Industrial Fellowship No.157-30A&B

The object of this report is to give briefly the results of tests conducted on Carey Rocktex Granulated wool, loose wool and bats. Tests were conducted to determine the thermal conductivity, the moisture content of the wool as received, moisture content or absorption after exposing to a relative humidity of 100% and the dielectric strength of the various forms of wool.

Thermal Conductivity Tests

The conductivity tests were run on the flat plate conductimeters which have been described previously in the literature.

The results given in Table I below are the average results of a number of tests on each type of material. The conductivity K is expressed in B.T.U. per hr. per sq. ft. per degree fahrenheit temperature difference per inch of thickness.



DEPARTMENT

THE PHILIP CAREY COMPANY

PHYSICAL AND THERMAL CHARACTERISTICS OF CAREY ROCKTEX WOOL.

PAGE 27 A-1
DATE 2/1/39

SUPERSEDING

PAGE
DATE

APPROVED

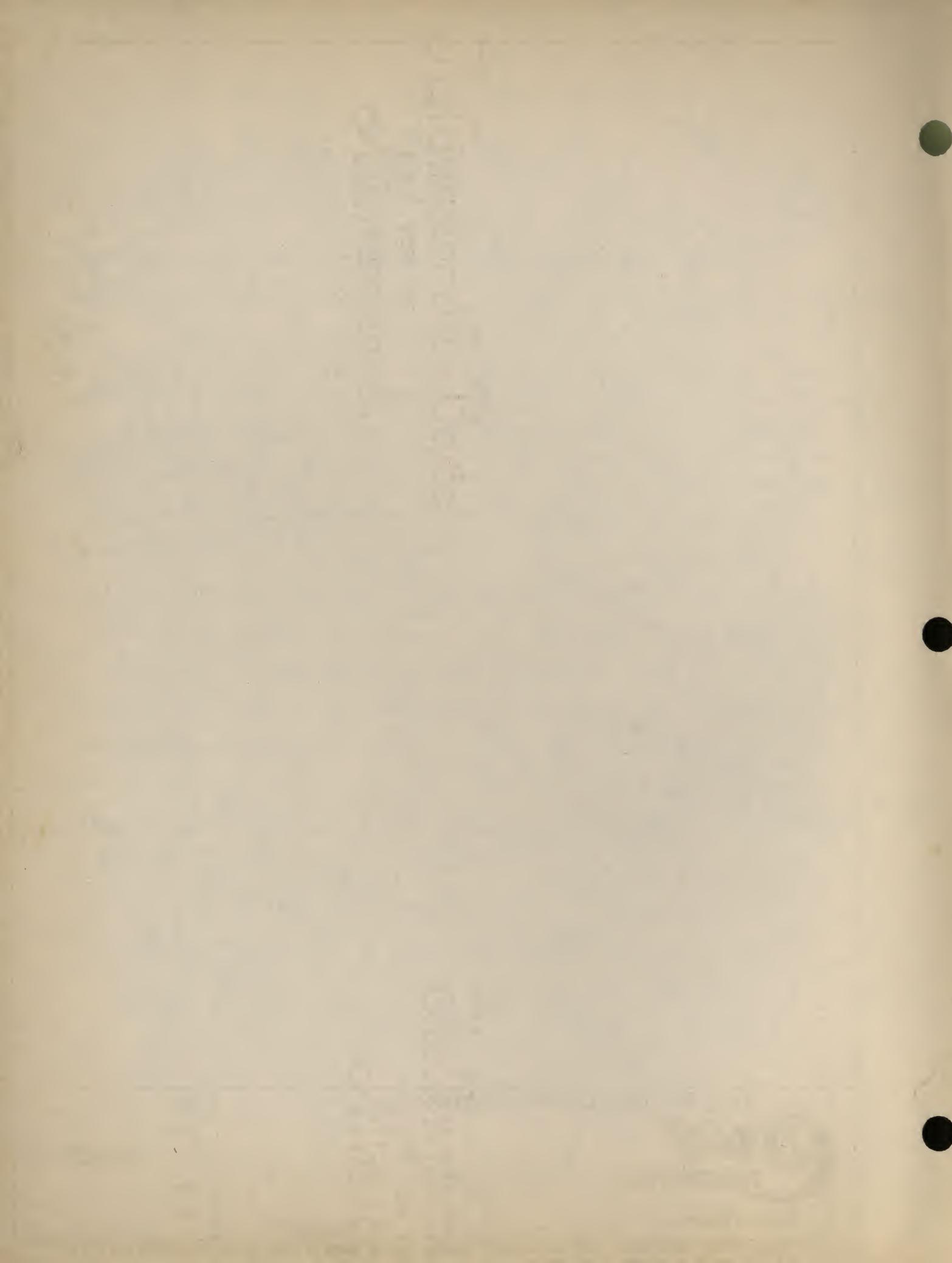


TABLE I.

Thermal Conductivity of Carey Rocktex Wool

<u>Material</u>	<u>Density lbs.cu.ft.</u>	<u>Mean Temperature Deg. Fahr.</u>	<u>Thermal Conductivity K</u>
Loose Wool	6.00	72	.242
Loose Wool	8.00	72	.248
Granulated Wool	7.00	72	0.30
Wool Bats	7.23	72	.266
Wool Bats	4.56	72	.227

Moisture Tests

Samples similar to the ones used in the conductivity tests were weighed and then placed in an electric oven and maintained at a temperature of 220° F. until there was no change in weight.

The amount of moisture contained in the samples as received from the Factory was calculated from the loss in weight obtained, and the results are expressed in per cent moisture content in Table II.

TABLE II.

Moisture Content as Received

<u>Material</u>	<u>Moisture Content Per Cent by Weight as Received</u>
Loose Wool	0.50
Granulated Wool	0.13
Wool Bats	0.00

Upon completion of the tests on the amount of moisture contained in the samples as received, the same samples

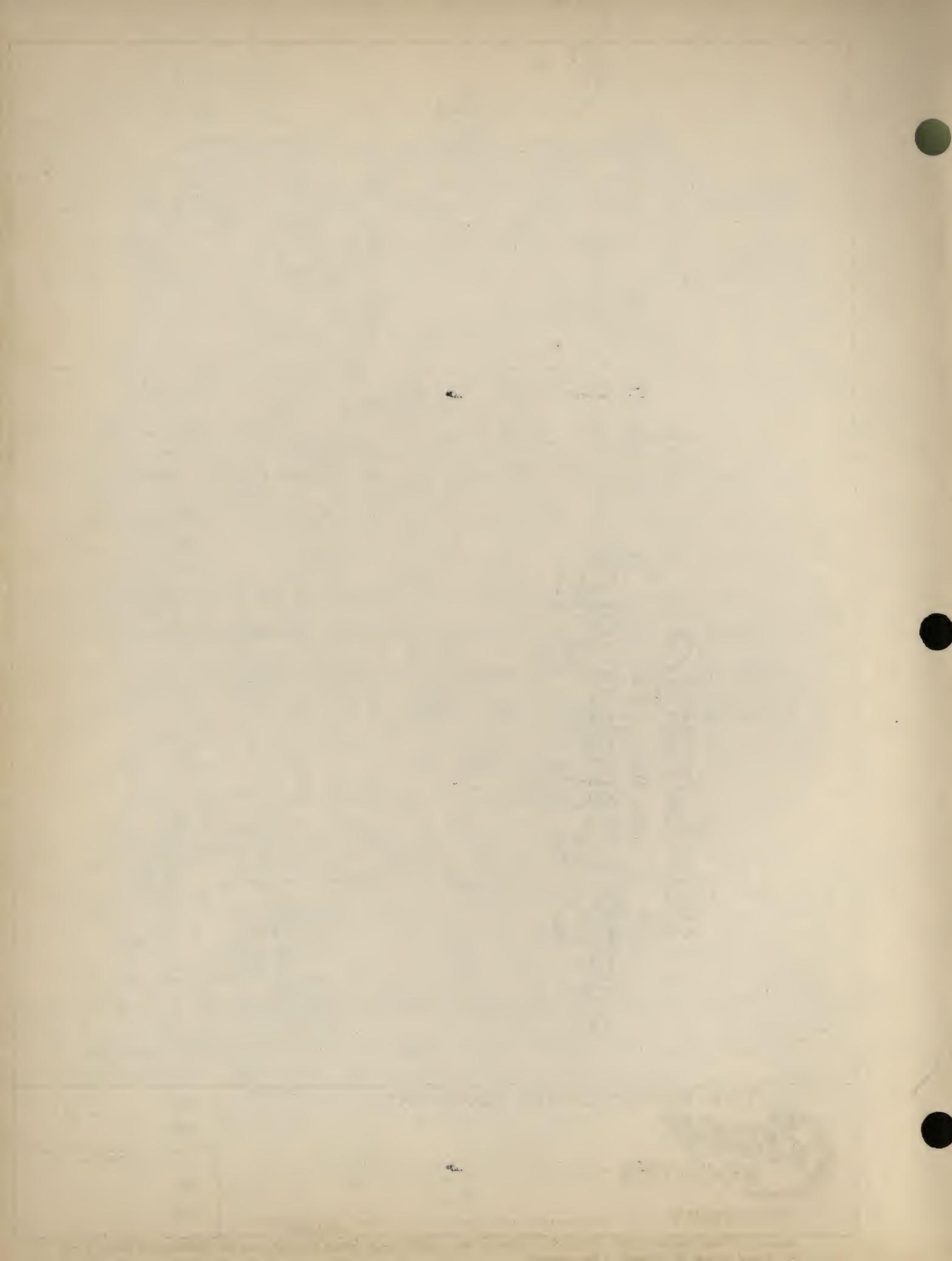
THE PHILIP CAREY COMPANY

Carey
ROCKTEX

DEPARTMENT

PHYSICAL AND THERMAL
CHARACTERISTICS OF CAREY ROCKTEX
WOOL

PAGE	27 A-2
DATE	2/1/39
SUPERSIDING	
PAGE	
DATE	



were placed in a moisture cabinet, at a temperature of approximately 75°F. The relative humidity in the cabinet was approximately 100%. The samples were allowed to remain in the moisture cabinet for 7 days, in order to determine the amount of moisture the samples would absorb when exposed to saturated air at normal temperatures.

Tables III gives the amount of moisture absorbed by each sample.

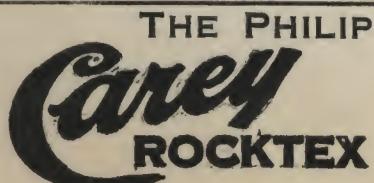
TABLE III
Moisture Absorption Test

Dry Material Exposed to Saturated Air at 75°F. for 7 Days

Material	Moisture Absorbed Per Cent of Dry Weight
Loose Wool	0.21
Granulated Wool	0.08
Wool Bats	0.03

Dielectric Strength Tests

In these tests, samples of the materials containing their original, as received, moisture content, and at densities approximately the same as those used in the conductivity tests, were used. The samples were placed between two spherical brass electrodes $1\frac{1}{2}$ " in diameter and spaced 2" apart. In each test the sample completely filled the space between the electrodes. A 60-cycle voltage was applied to the electrodes and the voltage required to produce breakdown was noted. The average of several tests on each material and also the breakdown voltage for air with the same separation of electrodes is given in Table IV.



THE PHILIP CAREY COMPANY

PHYSICAL AND THERMAL
CHARACTERISTICS OF CAREY ROCKTEX
WOOL

DEPARTMENT _____

APPROVED _____

PAGE	27 A-3
DATE	2/1/39
SUPERSEDING	
PAGE	
DATE	

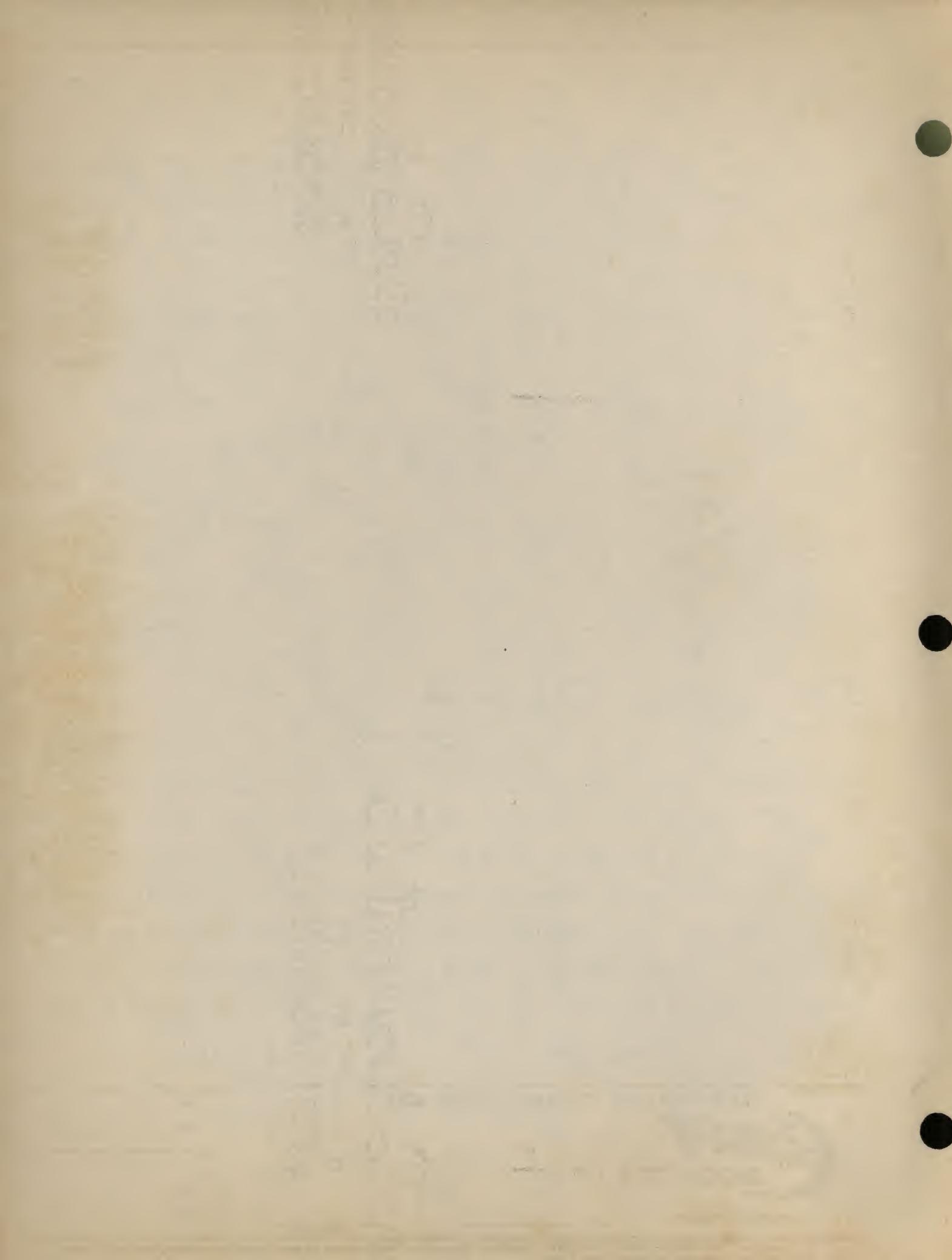


TABLE IV.

Dielectric Strength

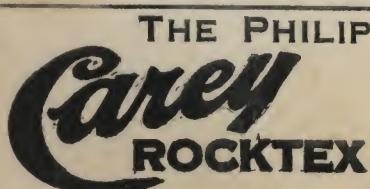
Material	Thickness Inches	Breakdown Pressure Volts
Loose Wool	2	33,600
Granulated Wool	2	35,900
Wool Bats	2	36,300
Air	2	40,400

The results of these tests indicate that the various materials have a low conductivity coefficient and that the moisture absorption in saturated air is low. Moisture determination tests run on samples of similar materials, which had been exposed to the atmosphere for several years, indicated approximately the same moisture content as was obtained on the samples, as received from the factory. It is believed that the amount of moisture absorbed by the samples in these tests when exposed to saturated air would have no practical effect on the insulating value of the material.

The dielectric strength tests show that these materials have a somewhat lower dielectric resistance than air; however, their dielectric resistance is so high that none of these materials will introduce any hazard, due to their dielectric properties when placed in walls and ceilings.

(signed) R.H. Heilman
SENIOR INDUSTRIAL FELLOW

R.H. Heilman-heb
January 7, 1939.



DEPARTMENT

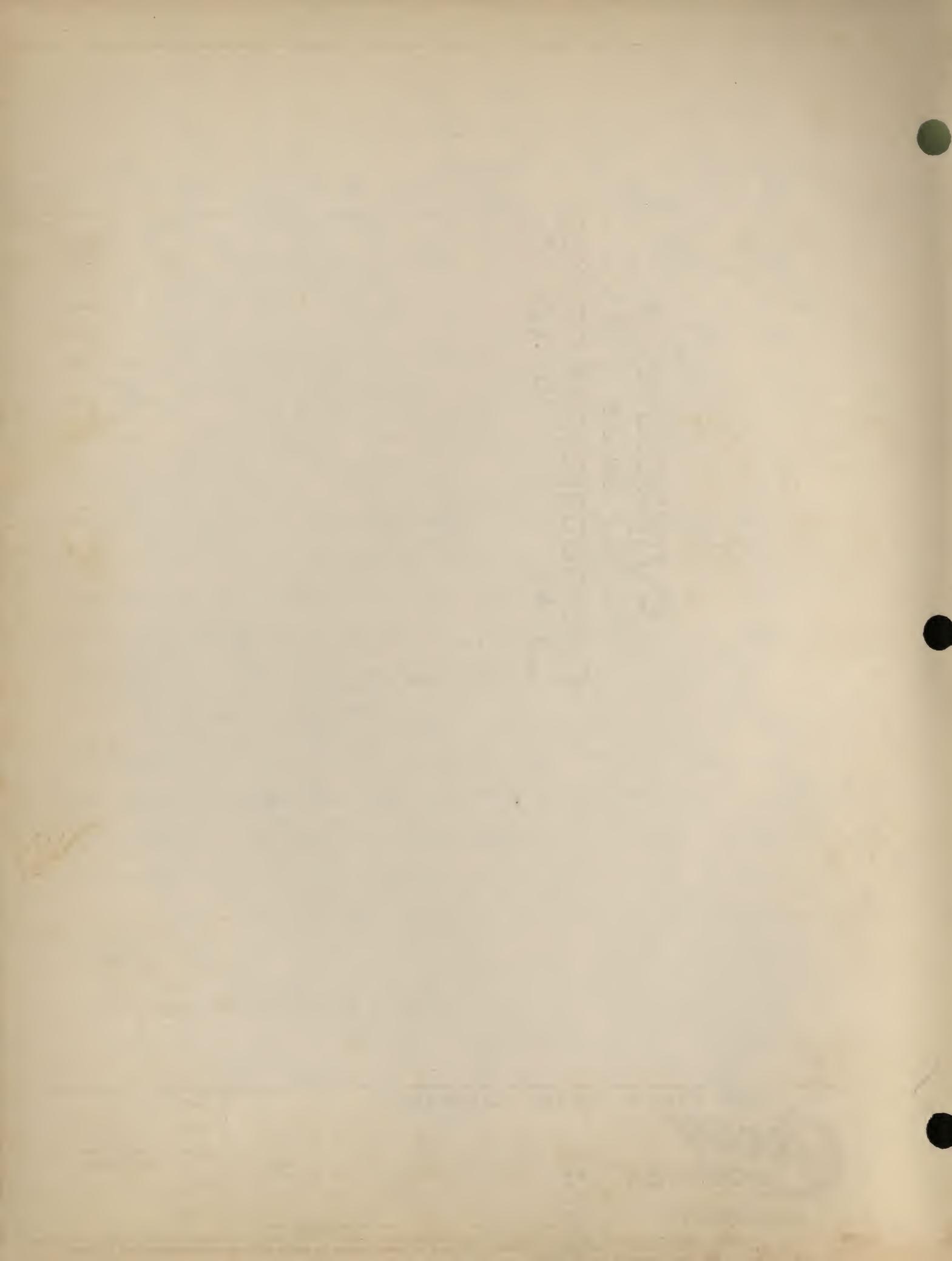
PHYSICAL AND THERMAL
CHARACTERISTICS OF CAREY ROCKTEX
WOOL

PAGE 27 A-4
DATE 2/1/39

SUPERSEDING

PAGE
DATE

APPROVED



COLUMBIA UNIVERSITY
Department of Civil Engineering

TESTING LABORATORIES

New York City

* * * * *

R E P O R T

O F

ONE HOUR FIRE TEST

MADE UPON

A WOOD STUD PARTITION PANEL FILLED WITH

CAREY ROCKTEX INSULATION

FOR

THE PHILIP CAREY COMPANY

60 EAST 42 STREET

NEW YORK CITY

Report No. 2479

December 29, 1938.

GENERAL:

The purpose of the test described herein was to determine the fire-resistive properties of Carey Rocktex Insulation, when used as a fire-retarding filler in wood lath and plaster partitions. The test specimen consisted of a 24" x 42" partition section in which the spaces between the studs were filled with Carey Rocktex Insulation. The partition section was constructed in these laboratories as hereinafter described and the conduct of the test was witnessed by representatives of the Board of Standards and Appeals of New York City.



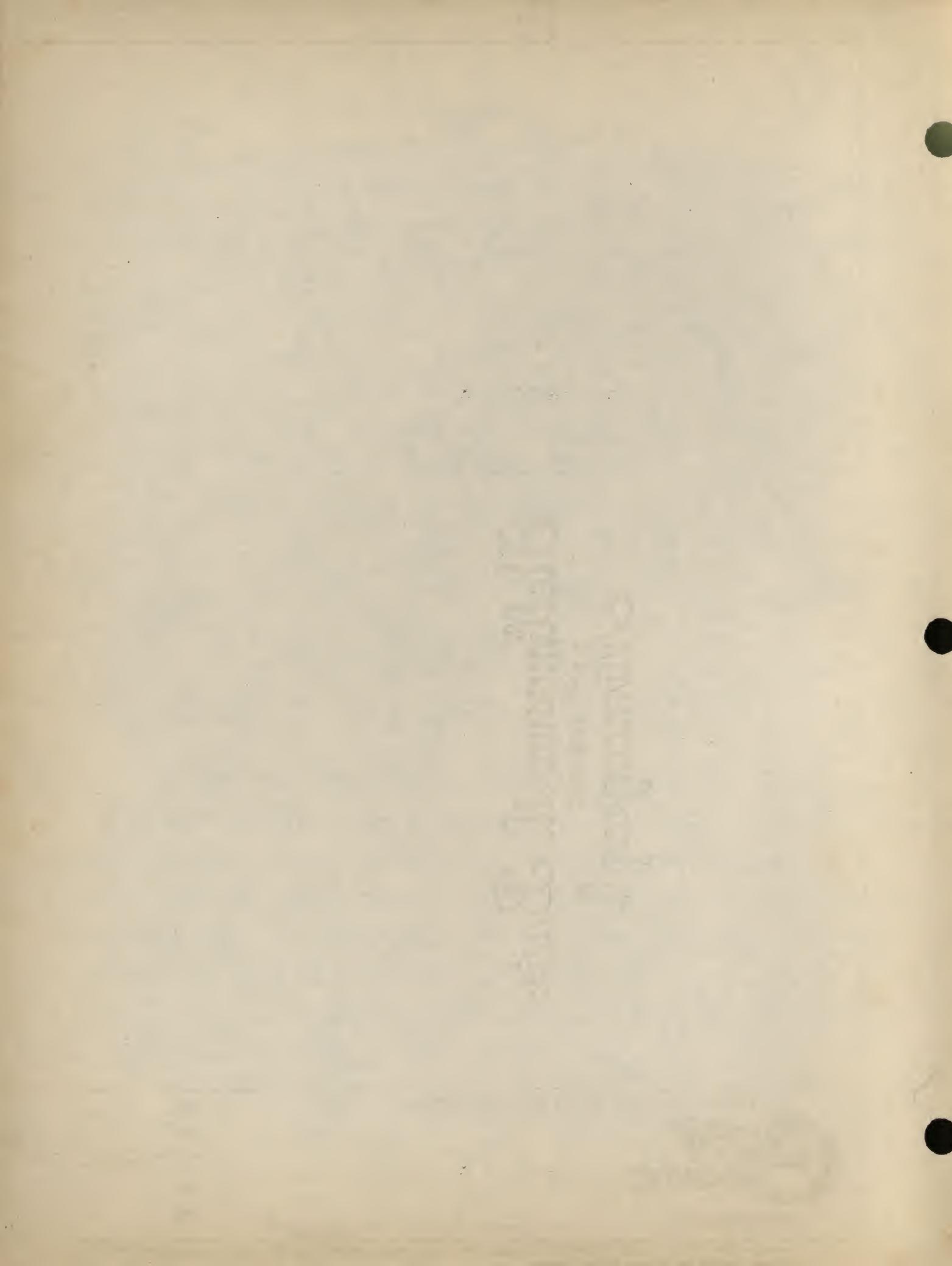
THE PHILIP CAREY COMPANY

WOOD STUD PARTITION FIRE TEST

DEPARTMENT

APPROVED

PAGE	27 B-1
DATE	2/1/39
SUPERSEDING	
PAGE	
DATE	



Description of Test Panel:

The partition section was constructed of 2" x 4" wood studding, wood lath and gypsum plaster. A 24" x 42" wood frame consisting of four 2" x 4" studs attached to a 2" x 4" sill, and spaced 12", 16", and 12" c-c respectively, was constructed with commercial grade 2" x 4" studding. Wood lath were nailed to both faces of the frame, spaced to provide a 1/4" key. A 1/4" scratch coat was applied to the lath, using U.S.G. Red Top Sanded Plaster. This was followed with a 3/8" brown coat of the same material. A 1/8" finish coat was then applied using a mixture of 1 part Plaster of Paris to 3 parts lime-putty. The total thickness of plaster on each face of the panel was approximately 3/4". At the time of test the plaster had dried for 3 weeks under normal room temperature conditions.

The total volume of the spaces between the studs was 1.63 cu.ft. Carey Rocktex Insulation (loose fibre) was packed into these spaces by hand, 9-3/4 lbs. of insulation being used to fill the panel. The density of the filler in place in the panel was 6 lbs. per cu.ft. After the filler was in place, the top of the panel was sealed with lath and plaster.

METHOD OF TEST:

The fire test was made in an air-gas furnace in which the test panel formed one wall of the furnace, the other three



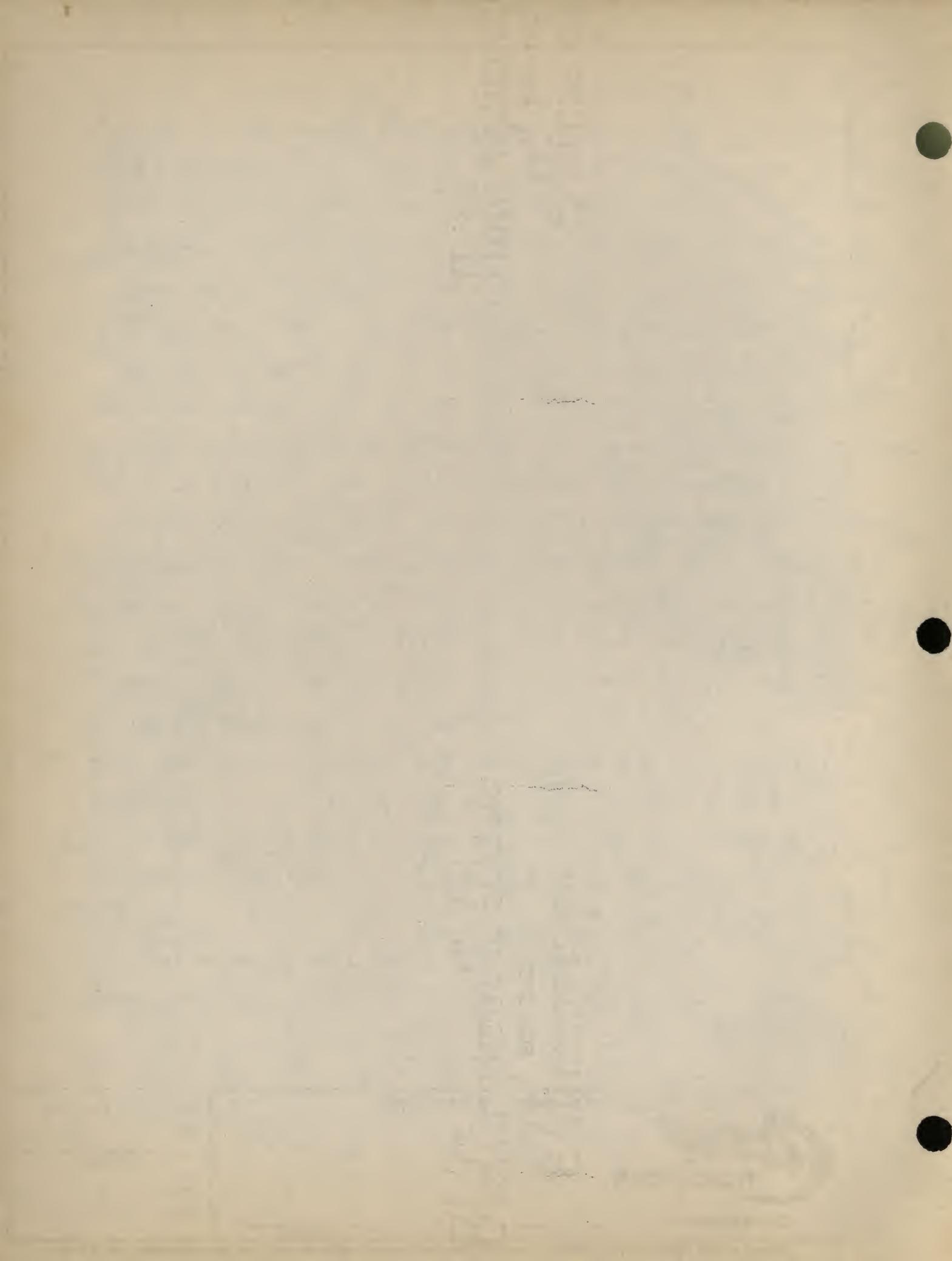
THE PHILIP CAREY COMPANY

WOOD STUD PARTITION FIRE TEST

DEPARTMENT

APPROVED

PAGE	27	B-2
DATE	2/1/39	
SUPERSEDING		
PAGE		
DATE		



walls consisting of cinder concrete slabs. The test panel, placed in a vertical position, was thus exposed to the temperature of the furnace on one face, while the other face of the panel was exposed to room temperature. The temperature within the furnace was increased, in accordance with the A.S.T.M. standard time-temperature curve, but with the time intervals halved so as to reach 1700°F. in 30 minutes. This temperature was then maintained practically constant for an additional half hour, making the total time of fire exposure one hour. Temperature readings were taken at regular intervals, by means of three iron-constantin thermocouples. Two couples were placed within the furnace, at the third points of its length and centered as to its width and height. One couple was placed in contact with the plaster at the center of the unexposed or room-side of the panel midway between the two intermediate studs. This thermocouple was covered with a 6" x 6" x 1/2" asbestos pad.

WITNESSES:

The following witnesses were present during the fire test described herein:

Leslie V. Huber - Chief Engineer, Board of Standards & Appeals,
New York City

Hugh P. Fox - Board of Standards and Appeals, New York City

R. C. Bressan - Philip Carey Company

RESULTS OF TEST:

The results of the fire test are contained in the following log of test and examination after test:-



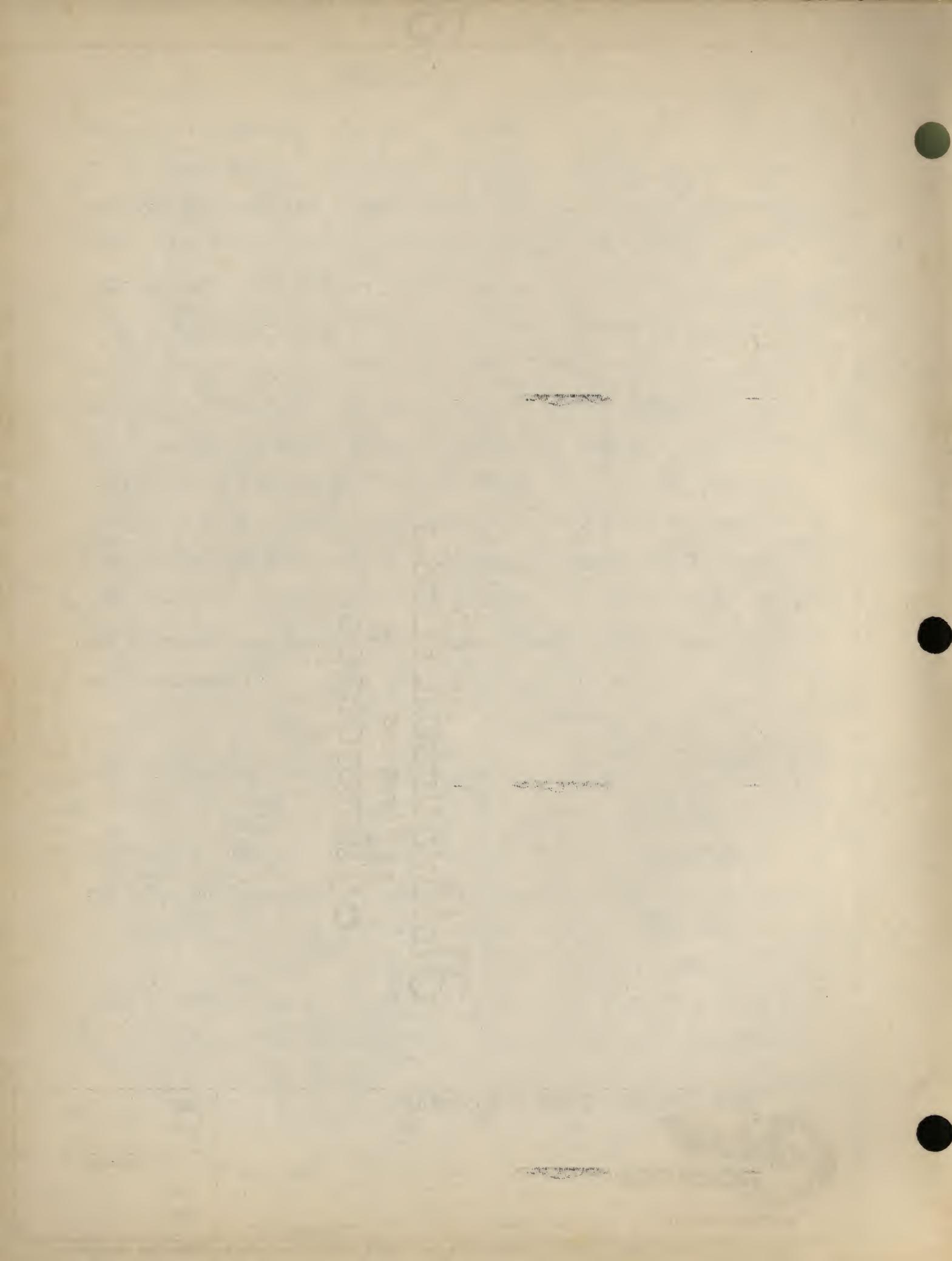
THE PHILIP CAREY COMPANY

WOOD STUD PARTITION FIRE TEST

DEPARTMENT

APPROVED

PAGE	27	B-3
DATE	2/1/39	
		SUPERSEDING
PAGE		
DATE		



LOG OF ONE HOUR FIRE TEST

MADE UPON A WOOD STUD PARTITION SECTION

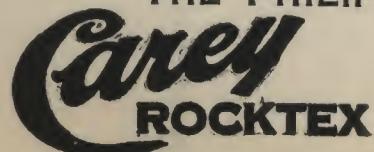
FILLED WITH CAREY ROCKTEX INSULATION

Date of Test - December 29, 1938

How Tested - Air-gas furnace; temperature increased in accordance with A.S.T.M. standard time-temperature curve, but with time intervals halved.

Duration of Fire Minutes	Average Temp. Of Furnace, °F.	Temperature Back of Panel Degrees F.	Remarks
0	68	68	0 Min... Room Temp... = 68°F
2	470	68	
4	715	68	
6	830	68	
8	955	68	
10	1130	68	
12	1180	68	12 Mins. - Finish coat of plaster cracked on fire exposed face.
14	1390	69	
16	1425	71	
18	1530	75	
20	1603	79	
22	1640	83	22 Mins. - Wood smoke coming from panel.
24	1685	94	
26	1698	100	26 Mins.-2 Wood smoke increasing. Finish plaster fallen off in spots on fire exposed face, exposing brown coat.
28	1700	108	
30	1710	112	
35	1730	120	35 Mins. - Wood smoke decreasing.
40	1748	126	
45	1733	130	
50	1700	133	
55	1703	135	
60	1715	139	

THE PHILIP CAREY COMPANY



WOOD STUD PARTITION FIRE TEST

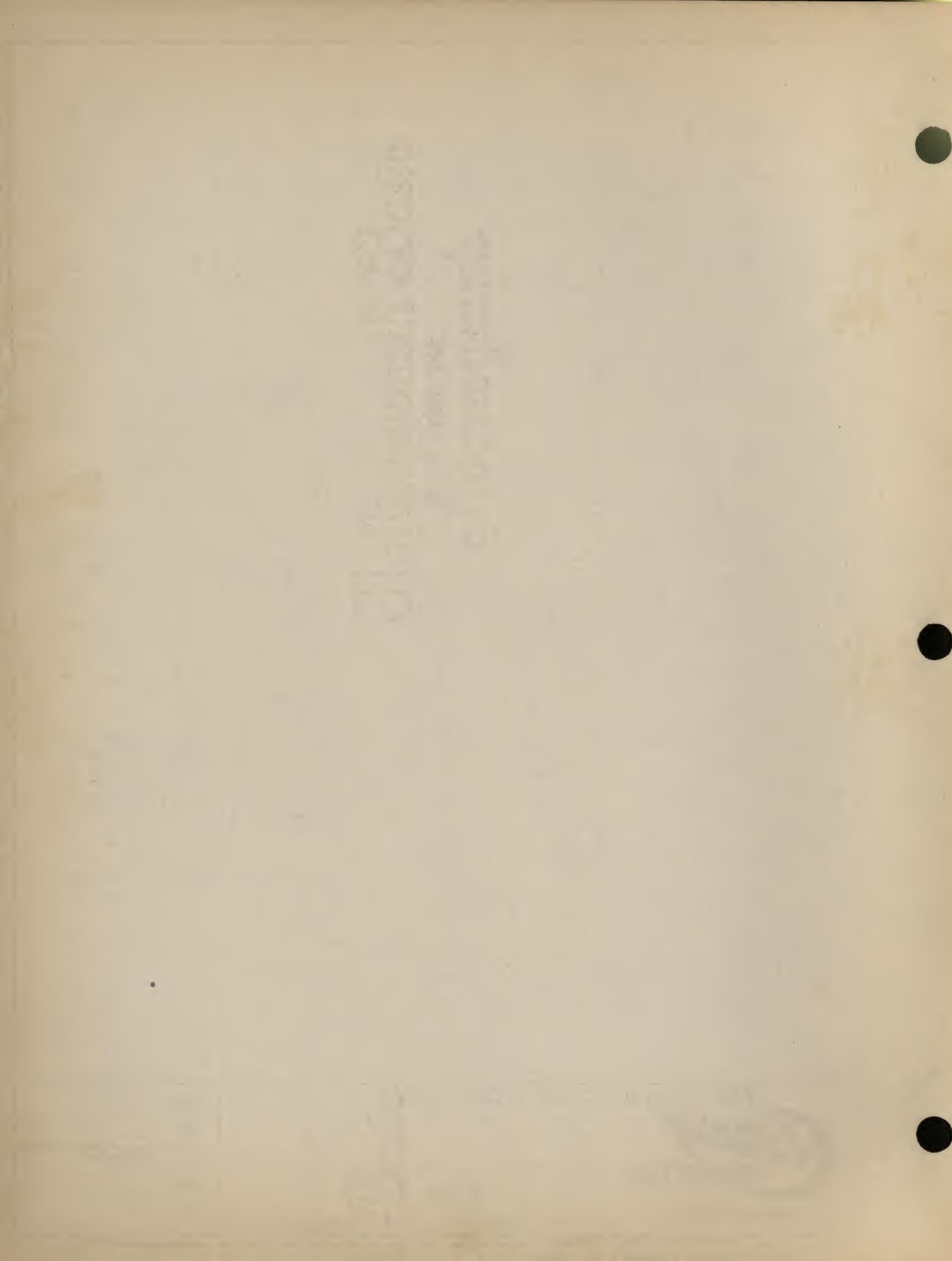
DEPARTMENT

APPROVED

PAGE 27 B-4
DATE 2/1/39

SUPERSEDING

PAGE
DATE



EXAMINATION AFTER TEST:

At the end of the test the entire scratch and brown coats were still in place on the fire exposed face of the panel. Parts of the finish plaster had fallen off. On removing the panel from the furnace, all the plaster on the fire-exposed face fell off, exposing the interior of the panel. Water was applied to the studs, which were flaming at this time. The wood lath on this face of the panel were completely consumed. The insulating wool was smoke-stained on the surface in contact with the charred wood lath but otherwise appeared to be in its original condition. The wood studs were charred to a depth of about 1 to 1-1/2 inches. On the face of the panel away from the fire the wood lath showed no effect of the fire. The plaster on this face showed no cracks and appeared to be in its original condition.

The condition of the test panel after removal from the furnace is shown on the photograph included in this report.

Respectfully submitted,

(signed) W.J. Krefeld

W.J. Krefeld, Director
Engineering Materials Lab.



DEPARTMENT

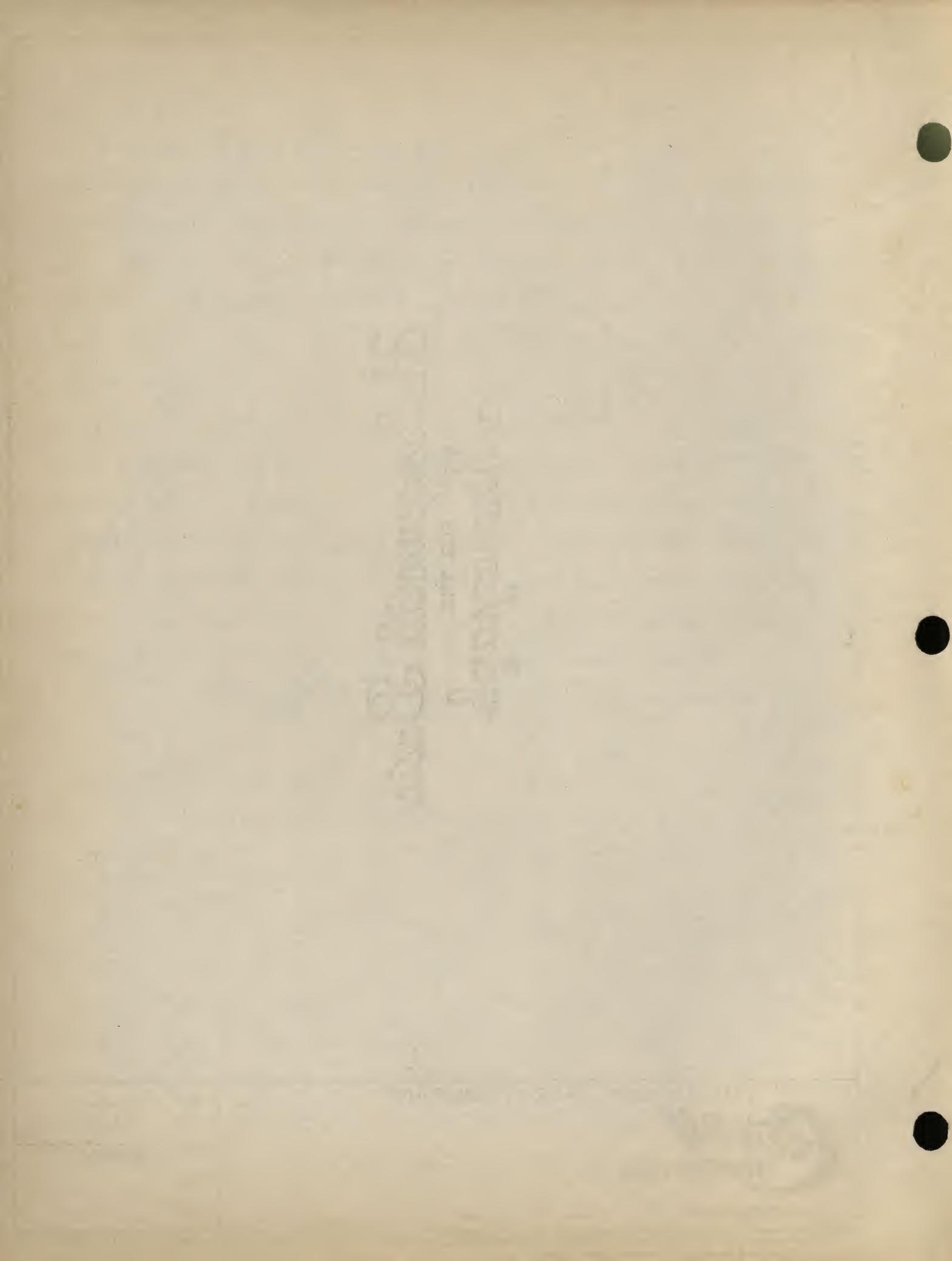
WOOD STUD PARTITION FIRE TEST

APPROVED

PAGE 27 B-5
DATE 2/1/39

SUPERSEDING

PAGE
DATE





THE PHILIP CAREY COMPANY
Carey
ROCKTEX

DEPARTMENT _____

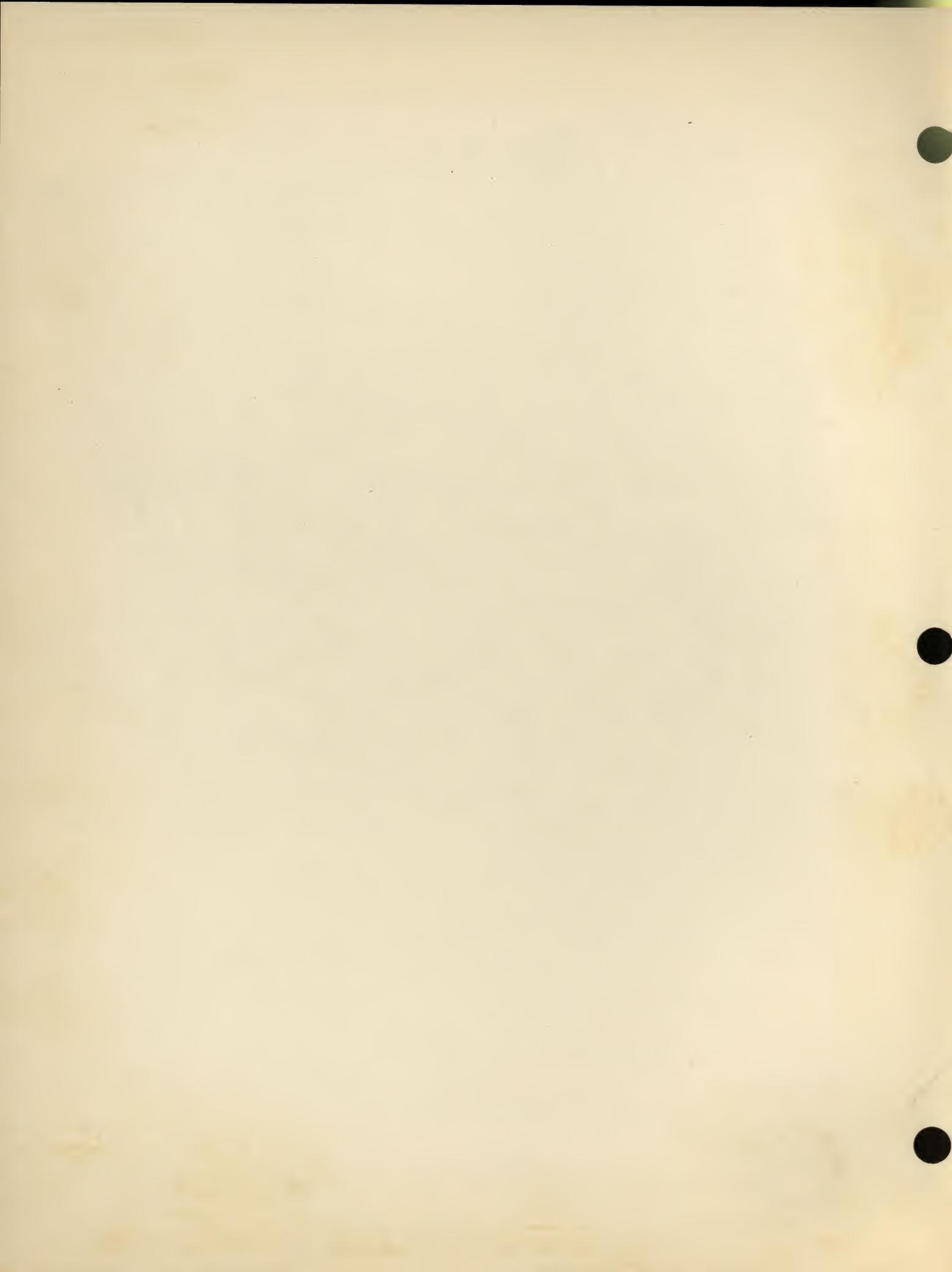
PHOTOGRAPH SHOWING
CONDITION OF PANEL AFTER TEST

APPROVED

PAGE 27 A-5
DATE 2/1/39

SUPERSEDING

PAGE _____
DATE _____



FORMS IN WHICH ROCKTEX IS FURNISHED

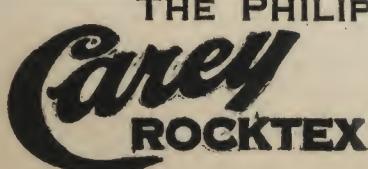
Carey Rocktex Insulation Wool is produced in forms especially adapted to both new and old buildings. By having Rocktex fabricated in this manner, many objections to Home Insulation have been done away with. It is now possible to economically insulate the new residence as well as thoroughly insulate the old home regardless of the number of years it has been built, and when the work has been completed there is no damage to house or grounds.

Loose Wool - Is used for open attic insulation, side walls of new construction stuffing in cracks and crevices and plugging openings made in the sheathing, and for blocking openings at overhangs, and use in loose wool blowing machines.

Granulated Wool - Refined Nodulated Rock Wool, extremely free of shot, designed for blowing or hand pack pouring. This material is used for insulating flat attic areas, slant ceiling areas of new and old structures, as well as the walls of the old home.

Bats - A semi-rigid block form of Rock Wool. Size 15" x 23" x "wall" or 2" thick and 15" x 48" x "wall" or 2" thick. The size is such that they are easy to install between studs and joists.*

Bats are used in open attics between joists and in walls of new construction. Bats are easily cut with a large knife or saw for fitting into irregular spaces.



THE PHILIP CAREY COMPANY

Forms in Which Rocktex is
Furnished

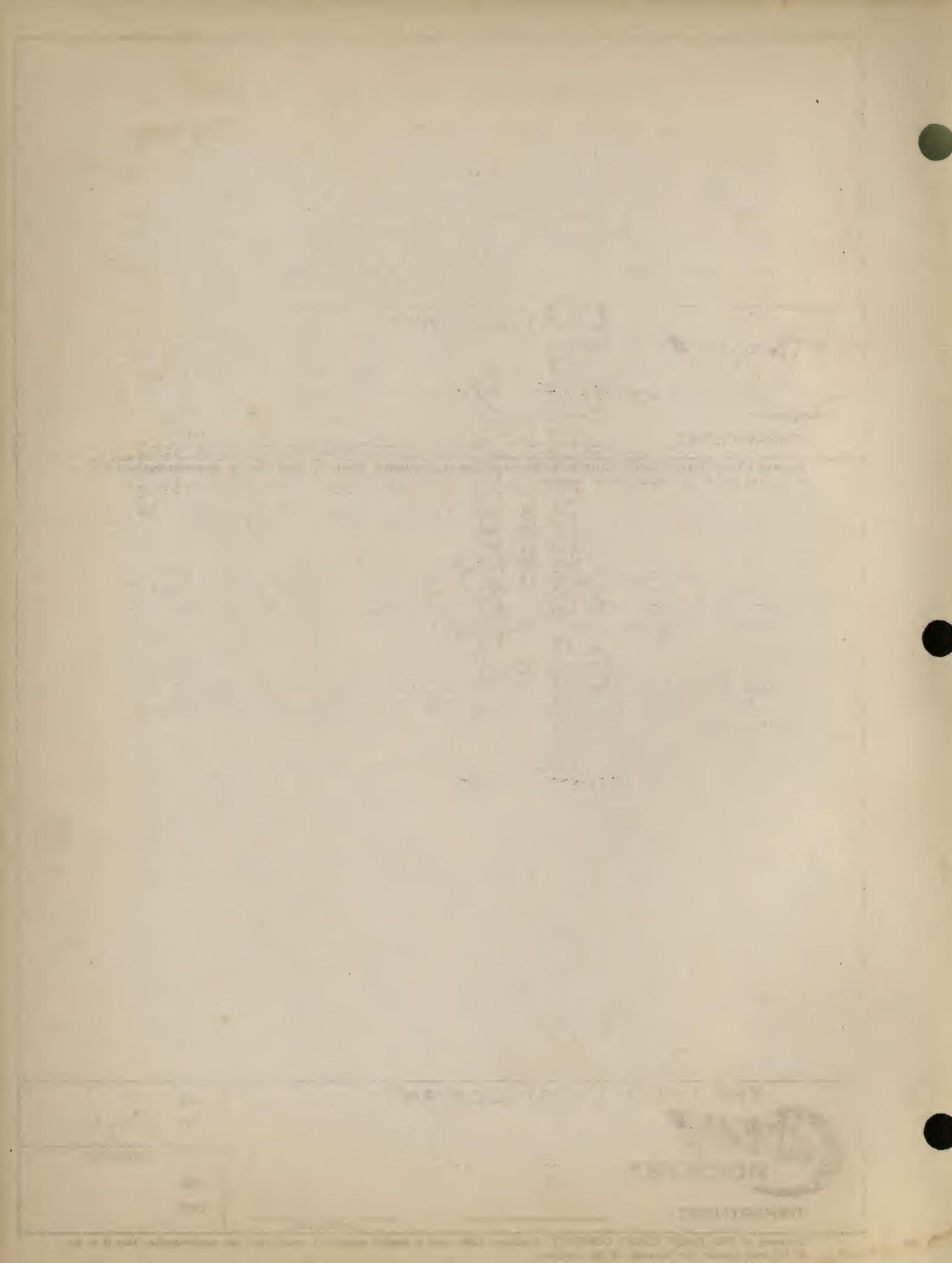
DEPARTMENT

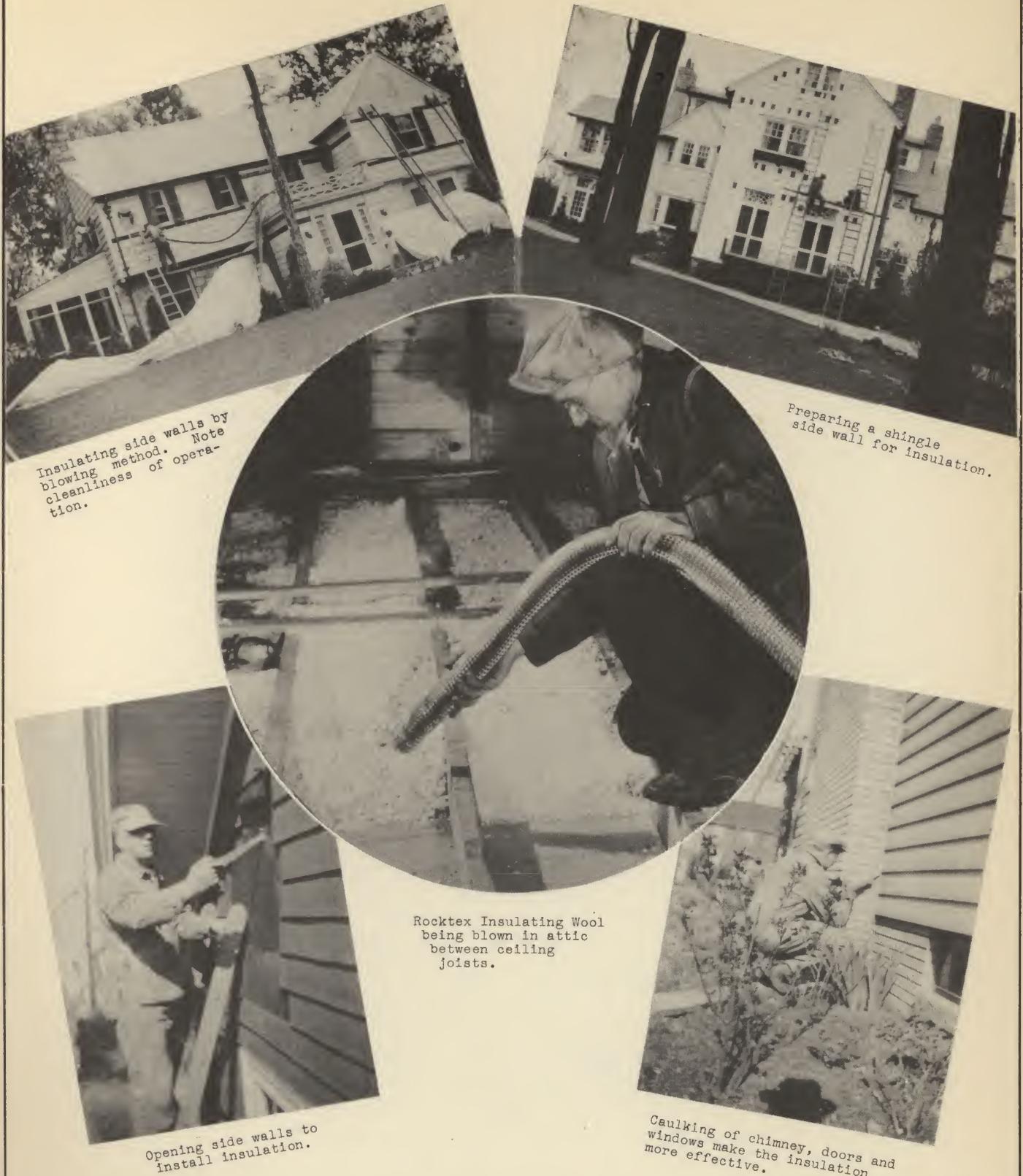
APPROVED

PAGE 28
DATE 7-24-36

SUPERSIDING

PAGE
DATE





THE PHILIP CAREY COMPANY

Carey
ROCKTEX
DEPARTMENT

PICTURES OF BLOWING APPLICATION

L.D.L.

PAGE 29

DATE 7-20-36

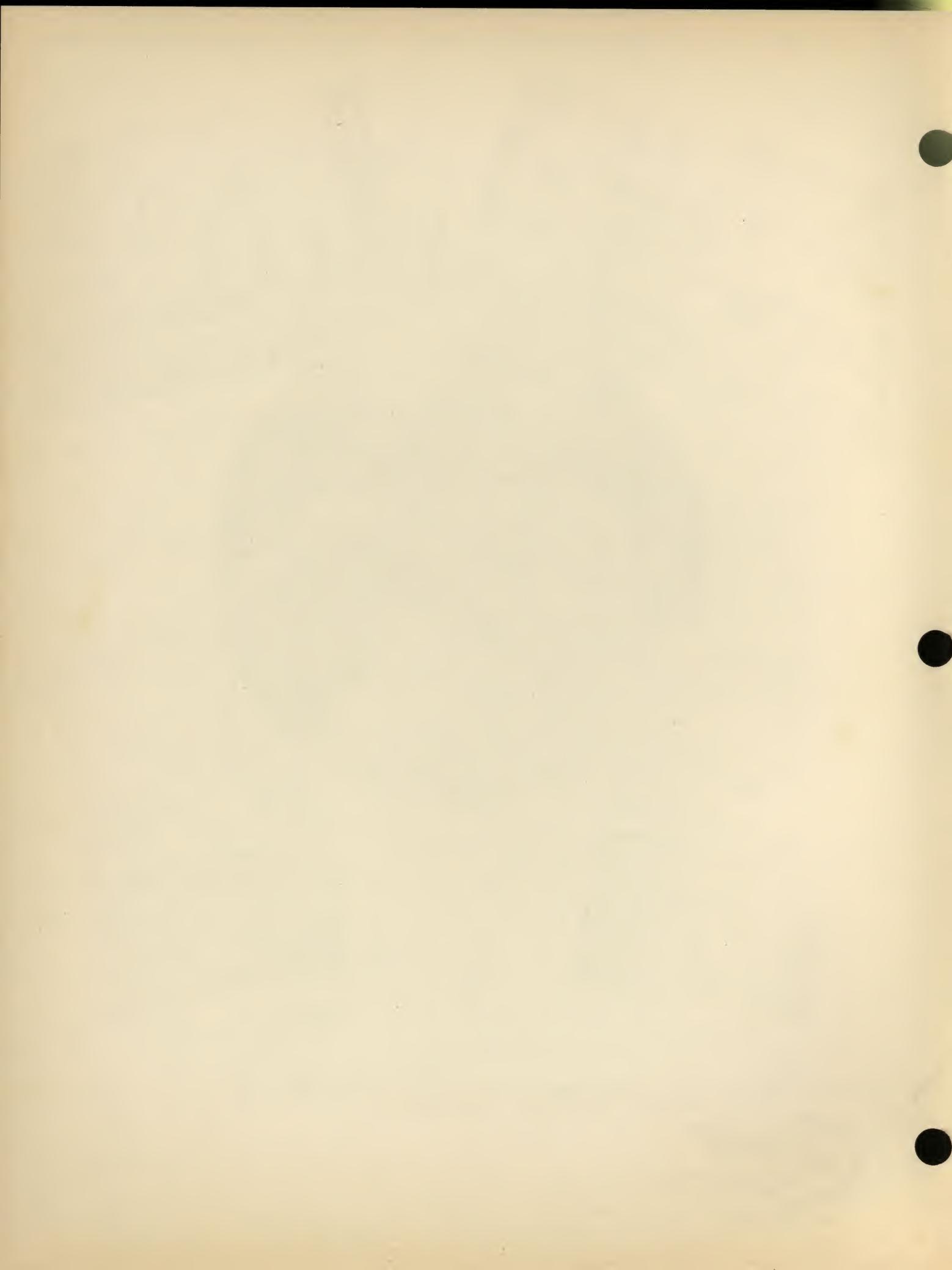
SUPERSIDING

PAGE

DATE

APPROVED

Property of THE PHILIP CAREY COMPANY; Lockland, Ohio, and is loaned subject to recall, with the understanding that it is not to be used against the interests of the company.



INSULATION APPLICATION

OLD HOUSES

BLOWING METHOD.

Every house presents an individual problem, and a careful inspection when estimating is necessary to insulate thoroughly.

Walls - Walls, which can be insulated, are primarily those with outer facings of shingles, clapboards, brick veneer, or stucco. Any combination of these outer facings may be found on a house. See sketches, page 20

When insulating by the blowing method, the top clapboard is removed by prying up the ends, or by using a nail cutting saw to cut the nails. Some applicators use a nail set and drive the nail through the clapboards.

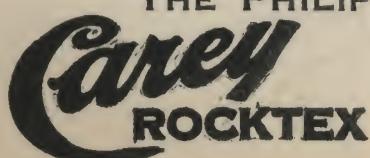
In case of a shingle siding, one or two shingles are removed by a shingle ripper, a tool for cutting nails holding the shingles.

When opening a stucco wall, make the opening in stucco as small as possible, because it is very difficult to match aged stucco. It is very seldom that a stucco finish can be replaced without showing up badly.

A brick veneer wall is opened, by removing one brick in each panel, or stud slot. It is sometimes possible to locate the brick on the stud and blow two slots with one opening. When replacing the brick, the mortar may be aged with a blow torch. When the opening has been made in the siding a hole, (usually 3" diameter) is bored through the sheathing. This opening is made with an electric drill, such as is used in cutting holes in metal instrument panels. Many applicators use a 2-7/8" diameter wood bit in an electric drill.

When the opening has been made, a plumb bob should be lowered in each stud slot to locate bracings or any obstruction which might be located in the panel. Where obstructions are found, it is then necessary to make openings just below the obstruction.

THE PHILIP CAREY COMPANY



DEPARTMENT

Application - Old Houses
Blowing Method

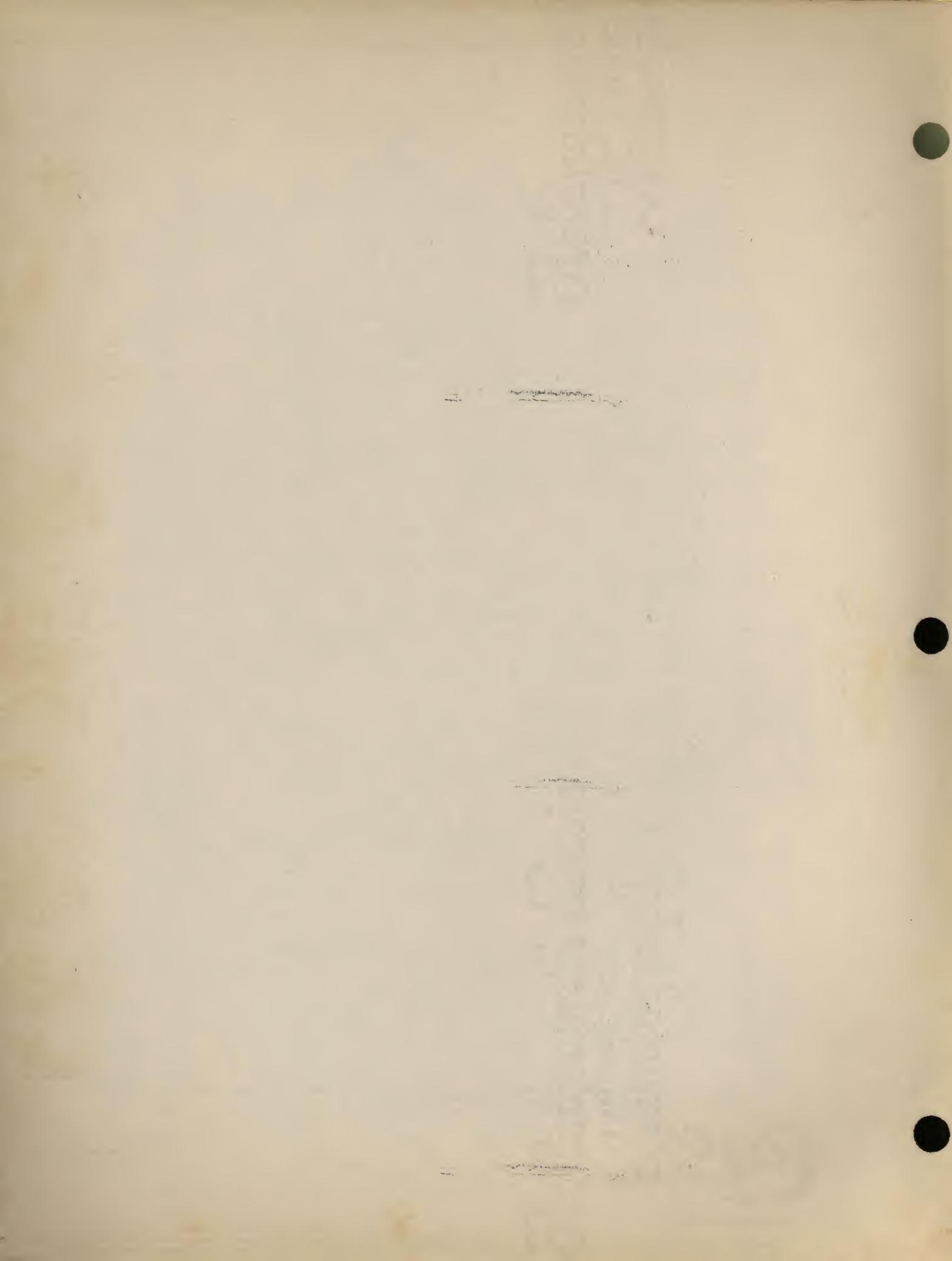
PAGE 30

DATE 7-24-36

SUPERSEDING

PAGE

DATE



After openings have been made, the stud slots are then ready to be filled. The outlet end of the hose is placed at the opening made in the sheathing, which gives access into the hollow wall space between the studs, and the material is conveyed through the hose and blown into the hollow wall space. Care should be taken to prevent the insulation from being blown back into the operator's face; this is usually taken care of by placing a sack, or cloth around the hose at the opening in the wall.

It is well to keep a close watch on the amount of material going into each wall panel. If more material is going into this space than is necessary, it is advisable to check and see if the basement plate is closed, as it should be. Many times it may be necessary to place a block between the joists as shown in detail "c" page 20.

Generally, no more than 2 pounds of pressure is used when blowing side wall insulation, in order to avoid the possible danger of blowing the plaster off of the side walls, and to prevent the granulated wool from blowing out of the opening, where the hose contacts the wall. Too much pressure will prevent proper packing of the insulating material, and may in some cases, if the lath and plaster are in a weakened condition, cause it to bulge. Approximately 2 pounds of pressure will assure a uniform density in the wall area. If there are any furring strips or top wall plates to separate the rafters, the walls may be blown from the attic without the necessity of making openings in the sheathing, at the top of the outside walls. The only openings necessary in a case of this type are under windows where wall bracings are found.

Roof - When insulating the second or third floors of a house where one or more rooms are located above the ceiling joists, it is necessary to get between the roof and the walls of the top floor rooms, and to insulate the walls of these rooms from the rear; these walls are insulated generally by using loose fibre, insulating and packing same to the depth of the 2" x 4" studs and supporting the material between these studs with a suitable backing nailed to the face of the studs. In some cases, 2" x 2" studs



DEPARTMENT

Application - Old Houses
Blowing Method

APPROVED

PAGE	31
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	

will be found, it is then advisable to nail 2" x 2" furring strips to these studs and building same out to the 2" x 4" size. It is then possible to insulate to the recommended wall thick fill. If Rocktex Bats are to be used on the wall area instead of the loose fibre insulating wool, the operation is quite simple, inasmuch as the bats are placed between the studding, tight against the lath and plaster and laced in place with No. 20 gauged annealed galvanized wire, spaced on approximately 18" centers.

In most cases it is necessary to make an opening in the roof to gain access to this area in order that the workmen may apply the insulating treatment. This should not create any cause for worry, inasmuch as the applicator will have experienced workmen on the job, workmen who are competent to take care of roof openings and closing, and to leave the roof without any defacings whatsoever.

This space under the roof deserves much consideration, as proper application of the insulating material in this area goes far in correcting cross air circulation through the home, which is the cause of a great loss of costly produced heat.

The ceiling of the room below this space should be treated by blowing 4" of granulated Rocktex on the lath and plaster and between the ceiling joists. Care should be taken to see that Rocktex is banked over the outside walls to a depth of 6" to 8". See detail "A" page 20. Do not fail to pack Rocktex to the full depth of the joists in the walls of the top floor rooms. See detail "A" page 20. After these spaces have been properly treated as outlined above, the workmen then can gain access to the flat ceiling area of the top floor rooms, and blow granulated Rocktex insulating wool into the slant ceiling area between the lath and plaster, and the roofing boards, to the full depth of the rafters. In some cases this thickness may be 6" or 8", depending upon the depth of the rafters. After the slant ceiling areas have been filled, then the workmen can insulate the flat ceiling area of these top floor rooms by blowing granulated Rocktex Insulating Wool over this entire area to a depth of approximately 4".

THE PHILIP CAREY COMPANY

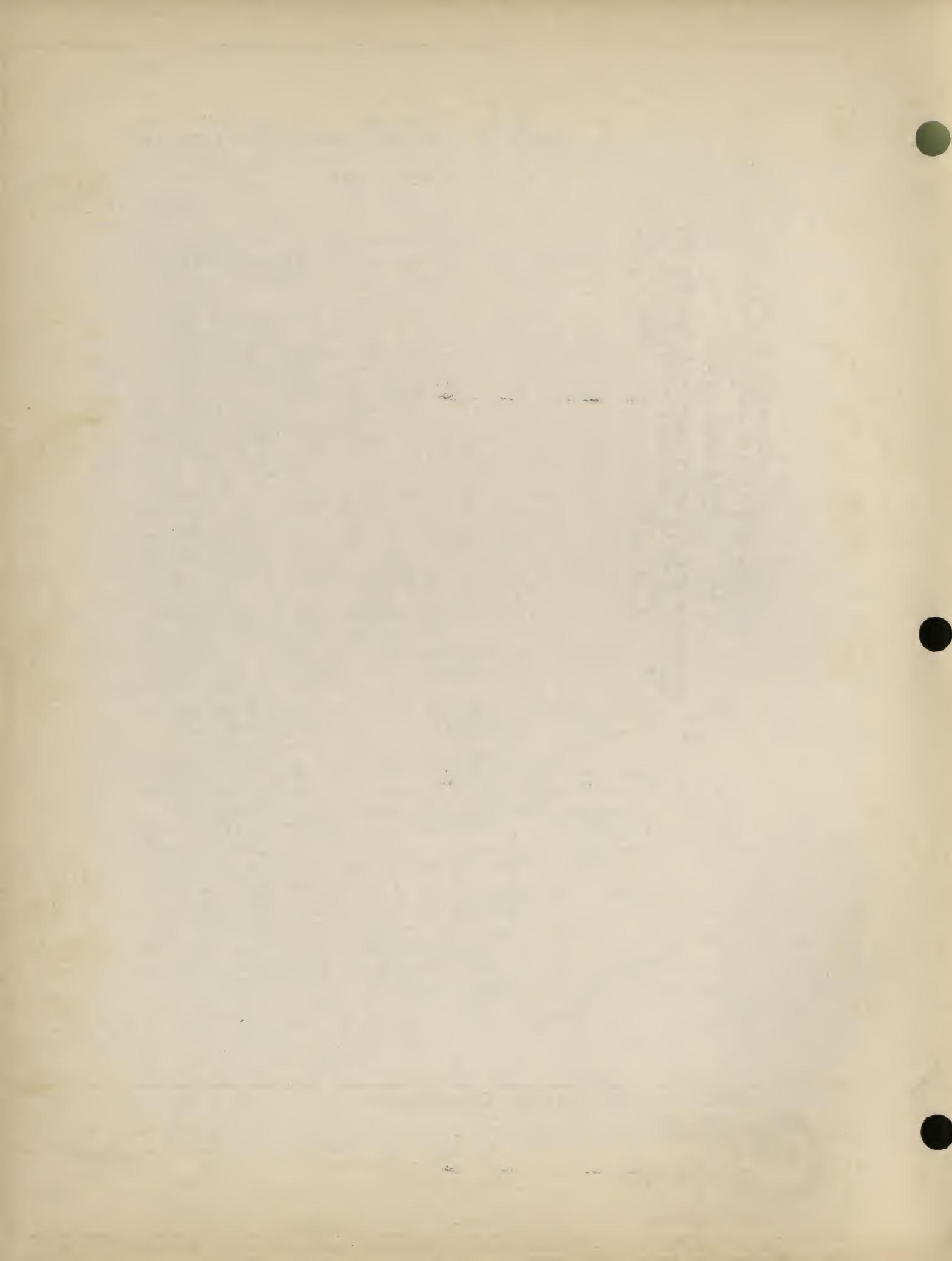


Application - Old Houses
Blowing Method

DEPARTMENT

APPROVED

PAGE	32
DATE	7-24-36
SUPERSIDING	
PAGE	
DATE	



Care should be taken when installing insulation in the walls and ceilings of homes, to be sure that the insulation does not find its way into the sash weight pockets, located on each side of the windows. Also care should be taken to be sure that insulation will not find its way into partitions, where sliding doors are located.

A certain amount of skill is necessary to fill the walls of a home correctly. This can be acquired only by actual practice by an intelligent crew. It is wise to have a well trained workman in charge of each of the crews, which you have in the field.

To insure an application, which will not in a matter of time come back to you as a complaint we ask that extreme care be taken throughout the entire job to insure proper application of the insulating wool.

We do not recommend thin insulation. Install all wool, at least wall thick (3-5/8") and in the rafter line of old construction install the material to the full depth of the rafter where the plaster line of the rooms follow the rake of the roof, providing this area is blown or in case of Rocktex Bats to the full thickness of the bats.

Never hang wool on nails where it is to be applied on vertical surfaces.

Always be sure that your application of insulation is uniform throughout the job, since thin points of insulation and uneven density are not good application.

Ventilators in the attic and proper wall breathing will help make your installation more effective.

Although an application of Rocktex in the home will outlast the life of the building without upkeep cost, there is an opportunity for repeat business by proper application to insure satisfied customers who naturally tell their neighbors and friends of the wonderful comfort and fuel savings they obtain with the insulation you have installed in their home.

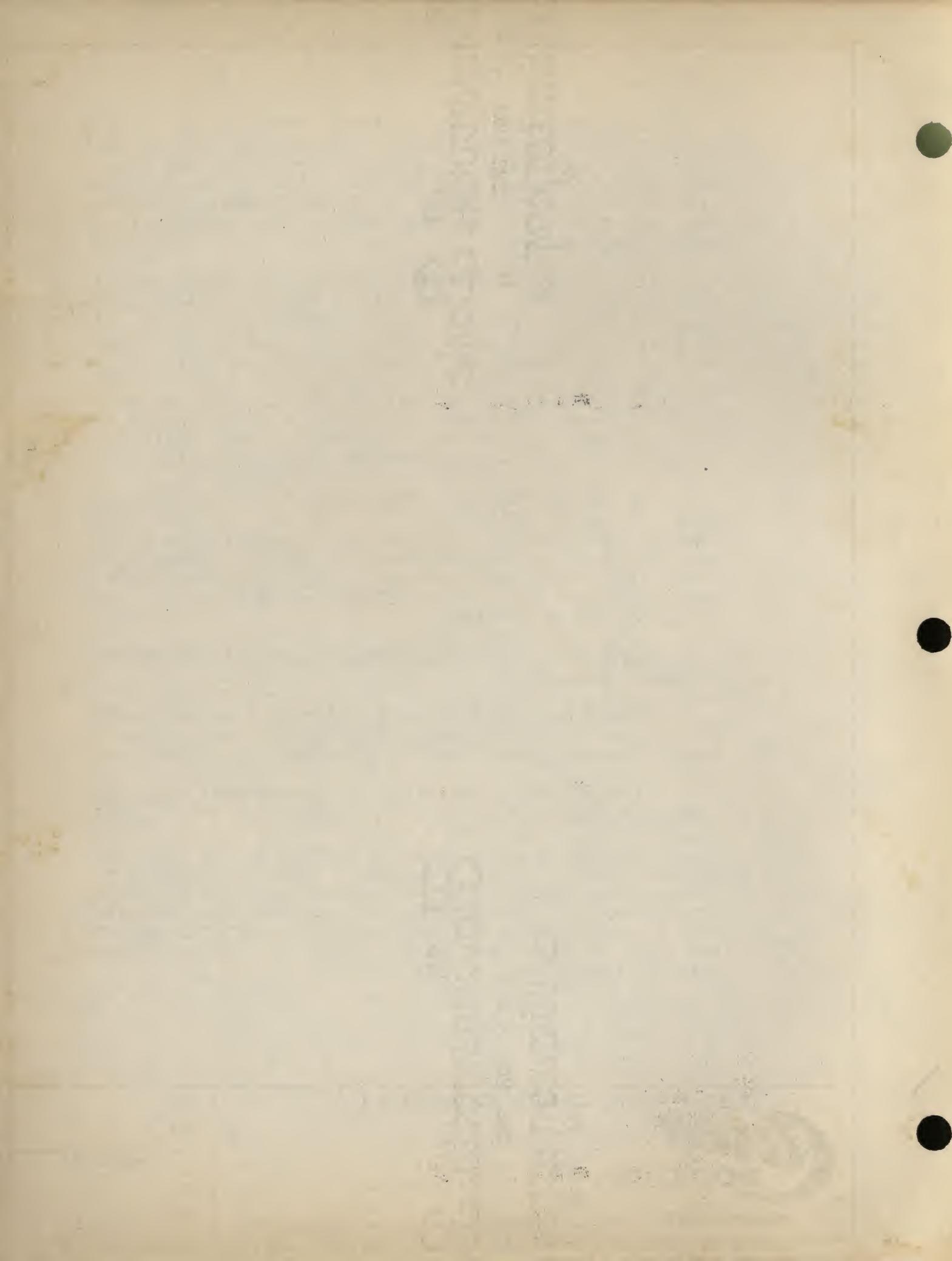


THE PHILIP CAREY COMPANY

DEPARTMENT

Application - Old Houses
Blowing Method

PAGE	33
DATE	7-24-36
SUPERSIDING	
PAGE	
DATE	





THE PHILIP CAREY COMPANY

Carey
ROCKTEX

DEPARTMENT _____

INSULATING OPEN ATTIC

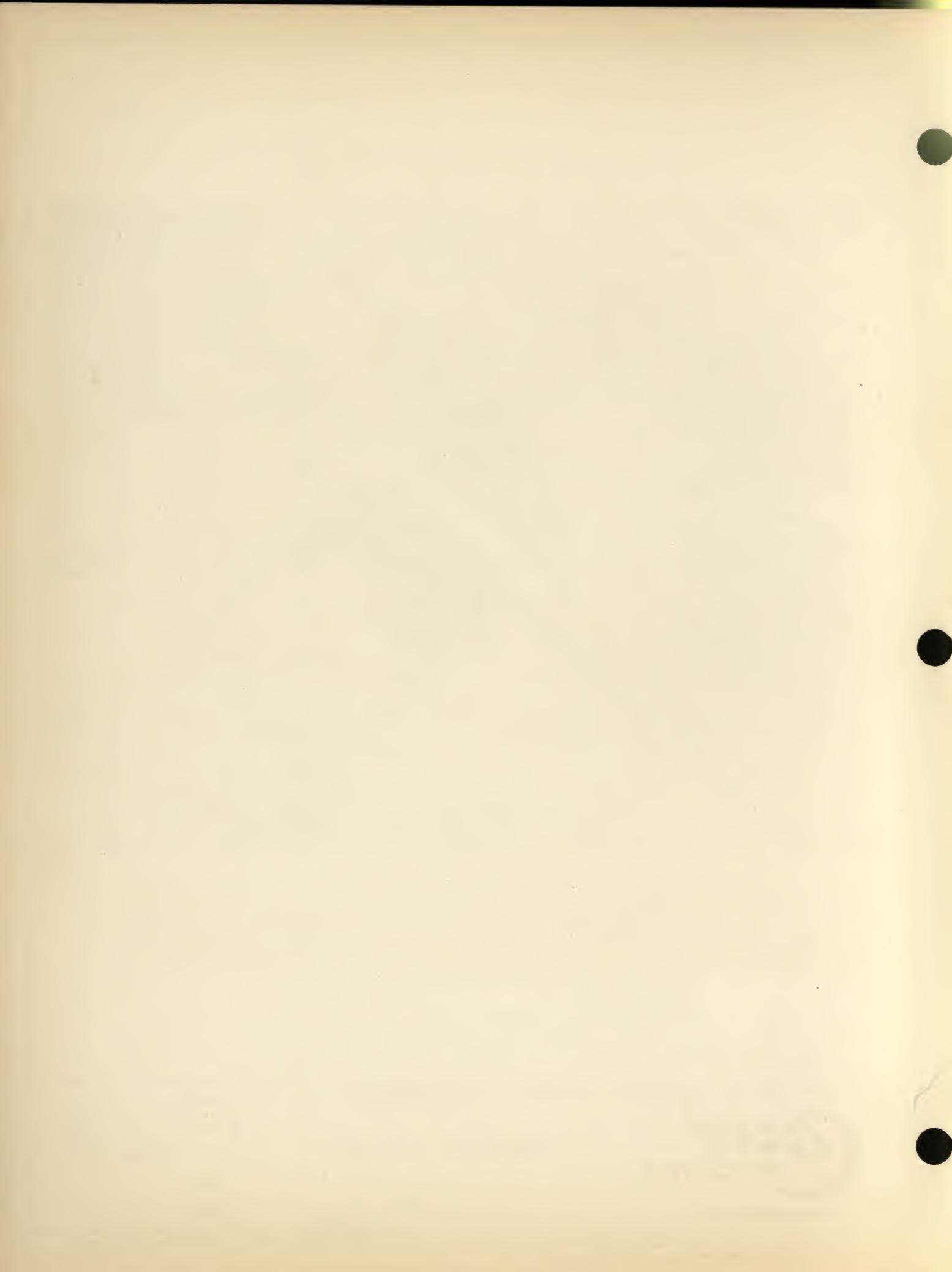
APPROVED

PAGE 33-1
DATE 9-12-39

SUPERSEDING

PAGE
DATE

Property of THE PHILIP CAREY COMPANY; Lockland, Ohio, and is loaned subject to recall, with the understanding that it is not to be used against the interests of the company.





THE PHILIP CAREY COMPANY
Carey
ROCKTEX

DEPARTMENT _____

INSULATING FLOORED ATTIC

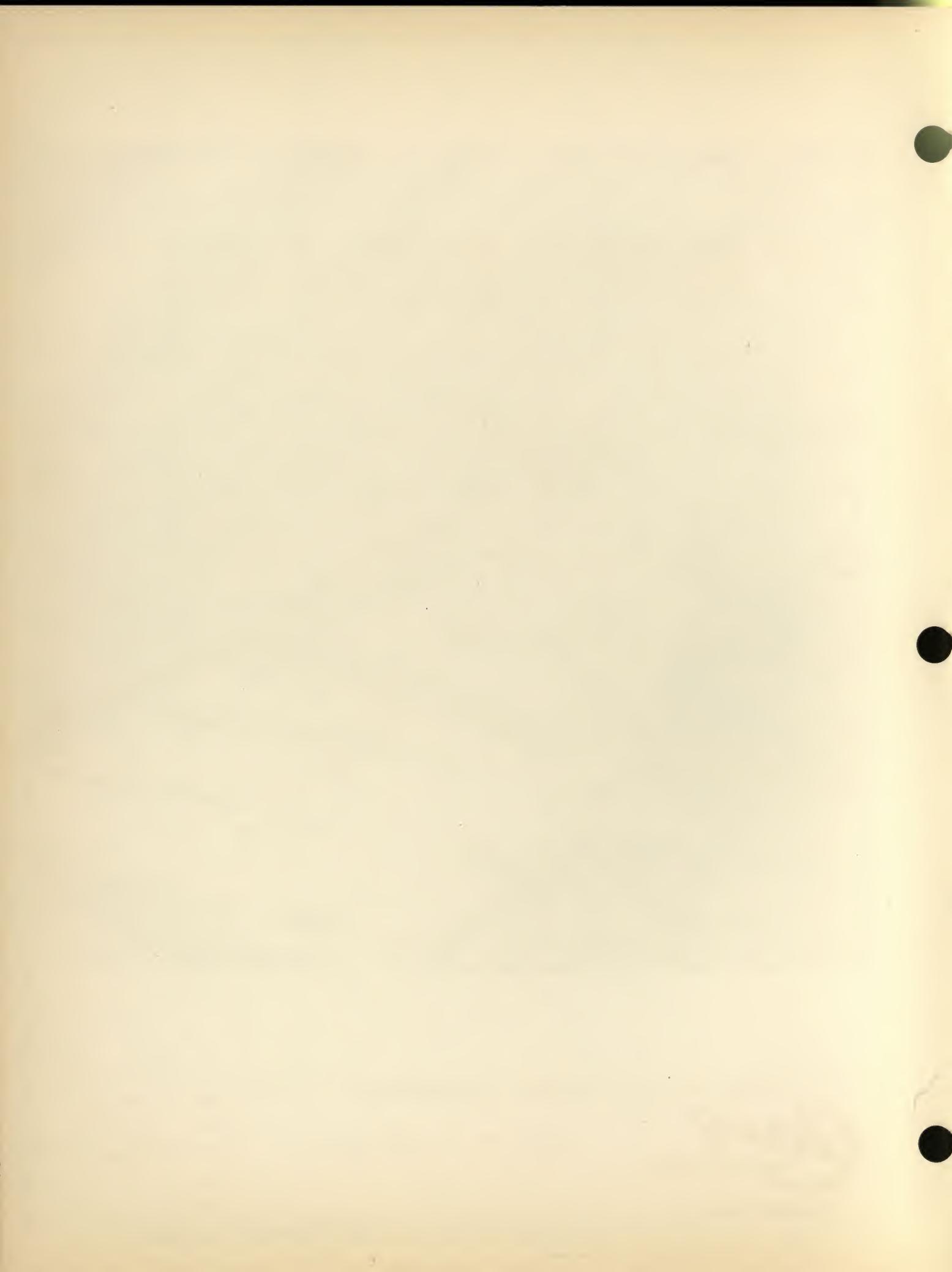
APPROVED

PAGE 33-2
DATE 9-12-39

SUPERSEDING

PAGE
DATE

Property of THE PHILIP CAREY COMPANY; Lockland, Ohio, and is loaned subject to recall, with the understanding that it is not to be used against the interests of the company.





THE PHILIP CAREY COMPANY
Carey
ROCKTEX
DEPARTMENT

INSULATING ATTIC
THRU ROOF OPENING.

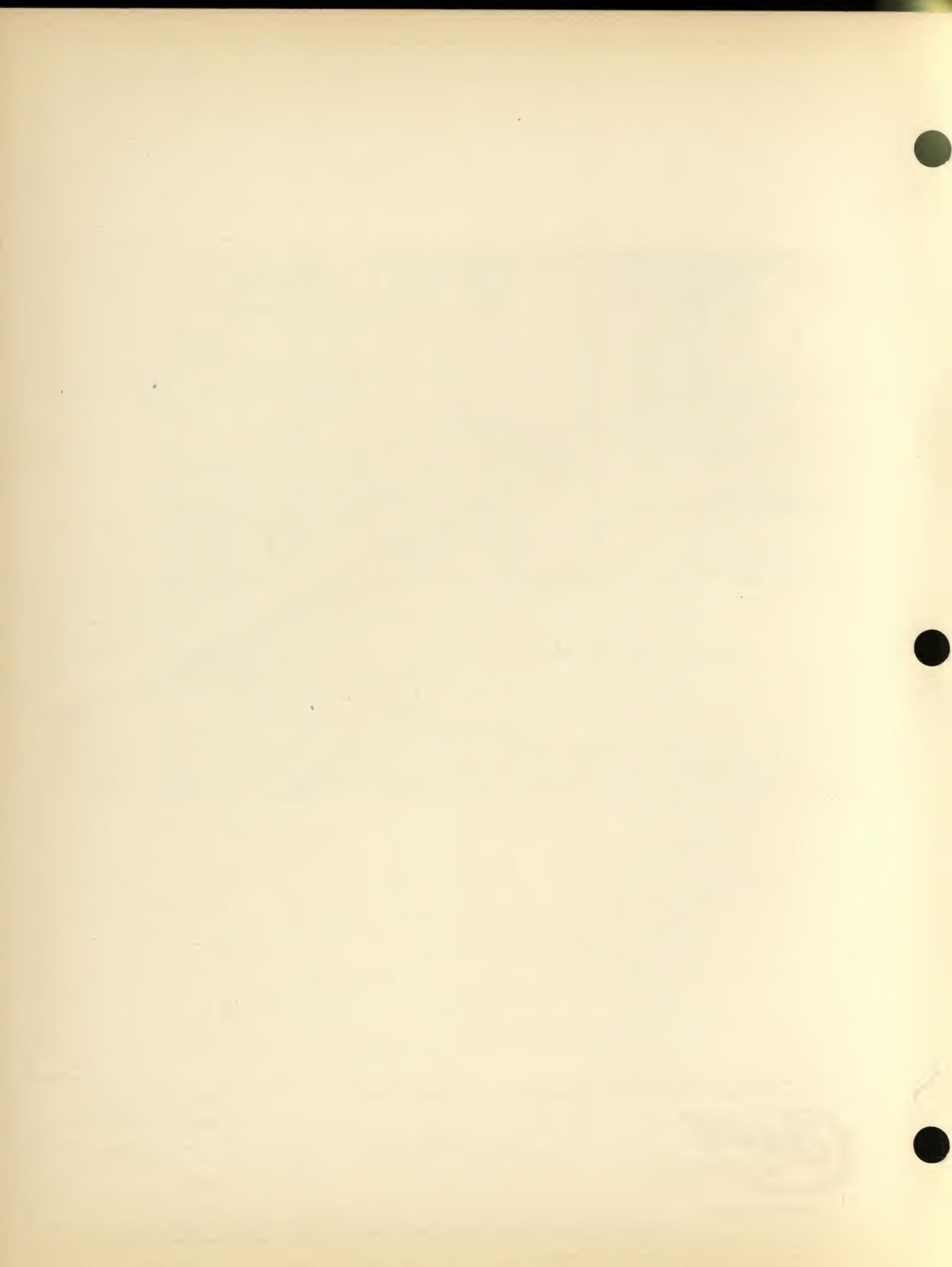
PAGE 33-3
DATE 9-12-39

SUPERSEDING

PAGE
DATE

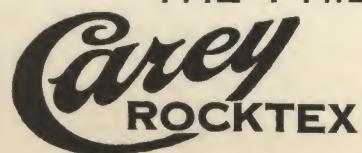
APPROVED

Property of THE PHILIP CAREY COMPANY; Lockland, Ohio, and is loaned subject to recall, with the understanding that it is not to be used against the interests of the company.





THE PHILIP CAREY COMPANY



DEPARTMENT

MAKING SIDE WALL OPENINGS

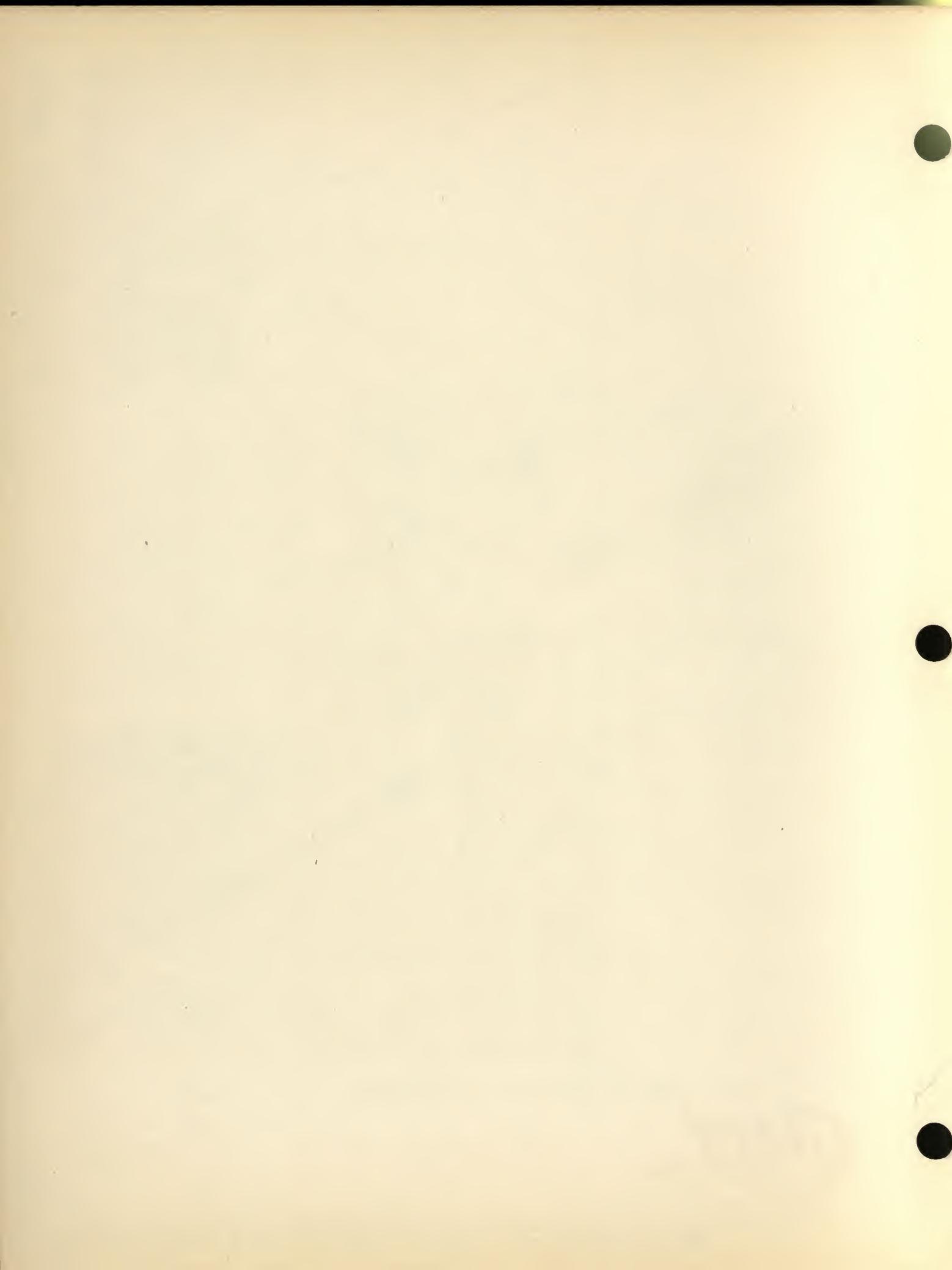
PAGE 33-4
DATE 9-12-39

SUPERSEDING

PAGE
DATE

APPROVED

Property of THE PHILIP CAREY COMPANY; Lockland, Ohio, and is loaned subject to recall, with the understanding that it is not to be used against the interests of the company.





THE PHILIP CAREY COMPANY
Carey
ROCKTEX

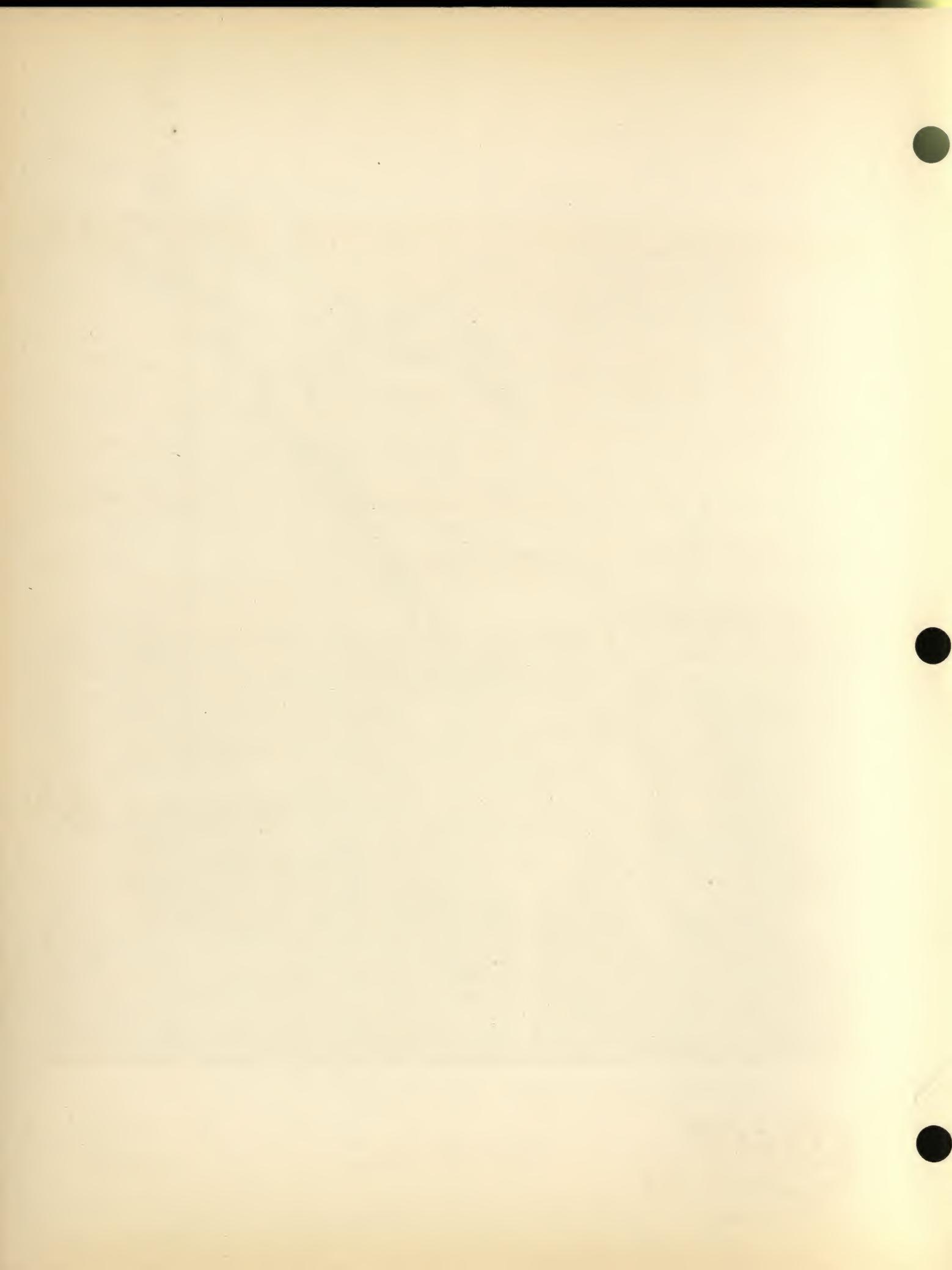
DEPARTMENT

INSULATING BACK OF
CLAPBOARD SIDING.

PAGE	33-5
DATE	9-12-39
SUPERSEDING	
PAGE	
DATE	

APPROVED

Property of THE PHILIP CAREY COMPANY; Lockland, Ohio, and is loaned subject to recall, with the understanding that it is not to be used against the interests of the company.





THE PHILIP CAREY COMPANY

Carey
ROCKTEX

DEPARTMENT

INSULATING BACK OF
CLAPBOARD SIDING

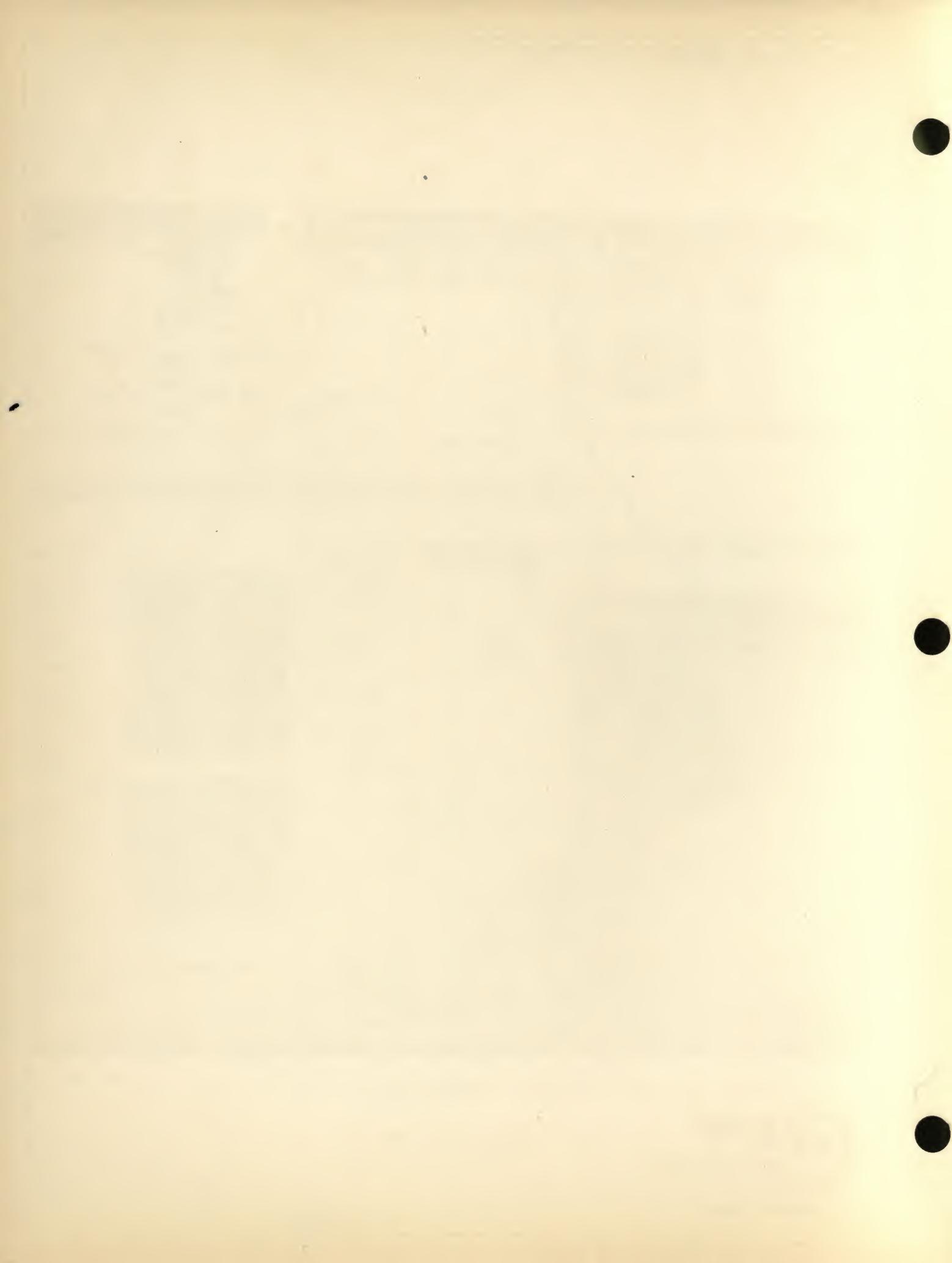
PAGE 33-6
DATE 9-12-39

SUPERSEDING

PAGE
DATE

APPROVED

Property of THE PHILIP CAREY COMPANY; Lockland, Ohio, and is loaned subject to recall, with the understanding that it is not to be used against the interests of the company.





THE PHILIP CAREY COMPANY

Carey
ROCKTEX

DEPARTMENT _____

INSULATING BACK OF
SHINGLE SIDING

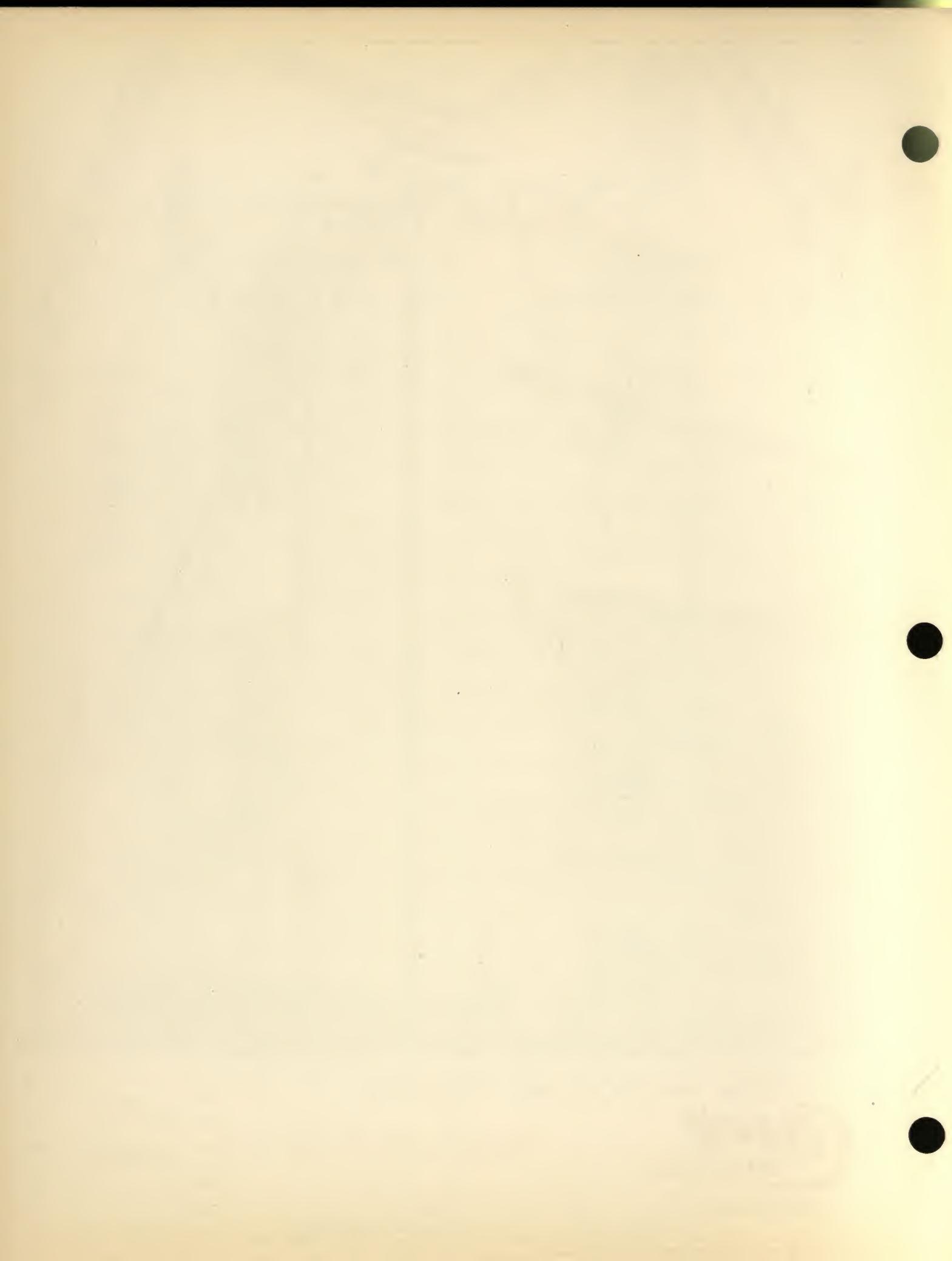
APPROVED

PAGE 33-7
DATE 9-12-39

SUPERSEDING

PAGE _____
DATE _____

Property of THE PHILIP CAREY COMPANY; Lockland, Ohio, and is loaned subject to recall, with the understanding that it is not to be used against the interests of the company.





THE PHILIP CAREY COMPANY
Carey
ROCKTEX
DEPARTMENT

INSULATING BACK OF
SHINGLE AND STUCCO SIDING

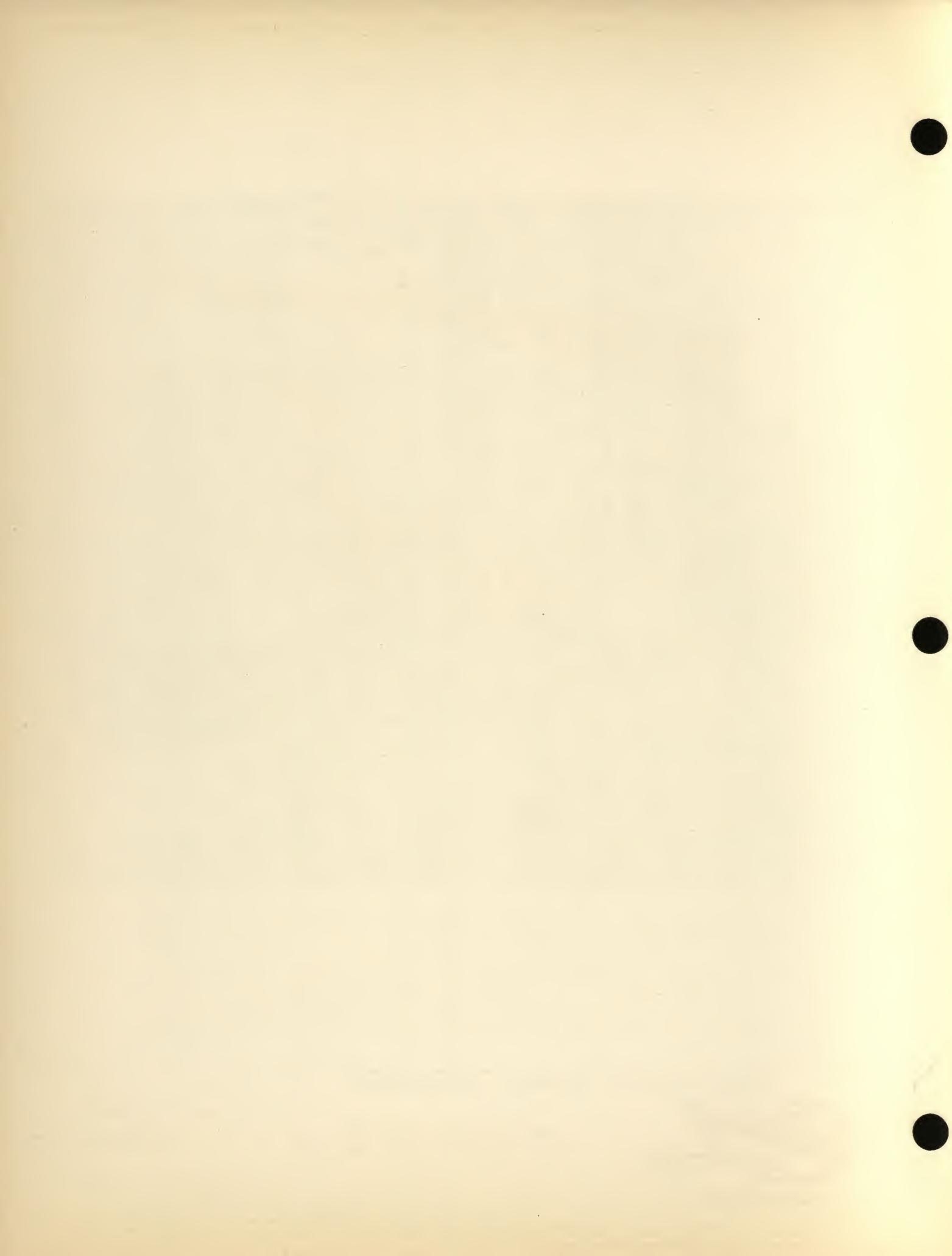
PAGE 33-8
DATE 9-12-39

SUPERSEDING

PAGE
DATE

APPROVED

Property of THE PHILIP CAREY COMPANY; Lockland, Ohio, and is loaned subject to recall, with the understanding that it is not to be used against the interests of the company.





THE PHILIP CAREY COMPANY
Carey
ROCKTEX

DEPARTMENT _____

INSULATING CEILING
UNDER FLAT ROOF

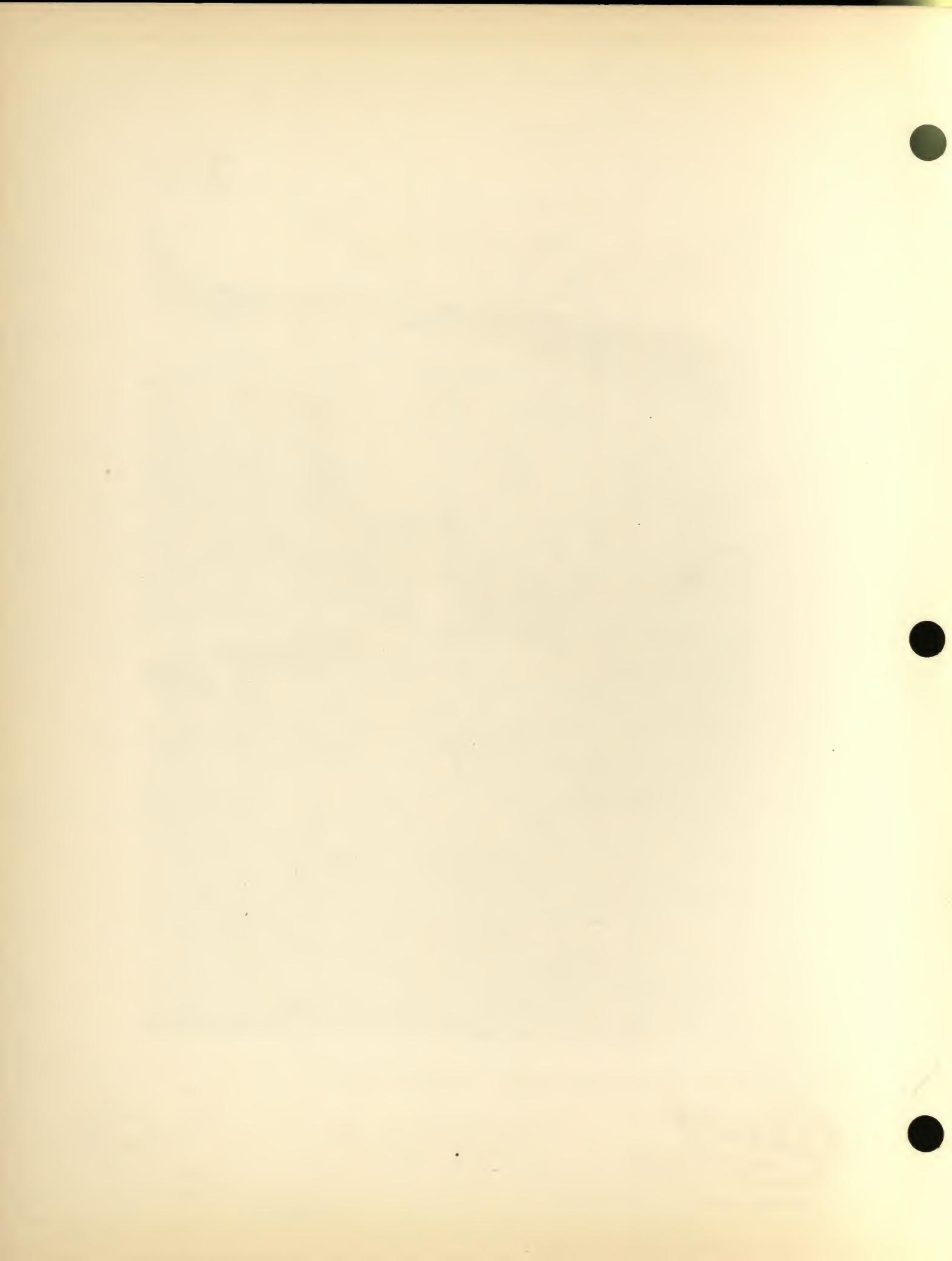
PAGE 33-9
DATE 9-12-39

SUPERSEDING

PAGE _____
DATE _____

APPROVED

Property of THE PHILIP CAREY COMPANY; Lockland, Ohio, and is loaned subject to recall, with the understanding that it is not to be used against the interests of the company.





THE PHILIP CAREY COMPANY

Carey
ROCKTEX

DEPARTMENT

CLOSING OPENING AFTER
INSULATING CEILING
UNDER FLAT ROOF

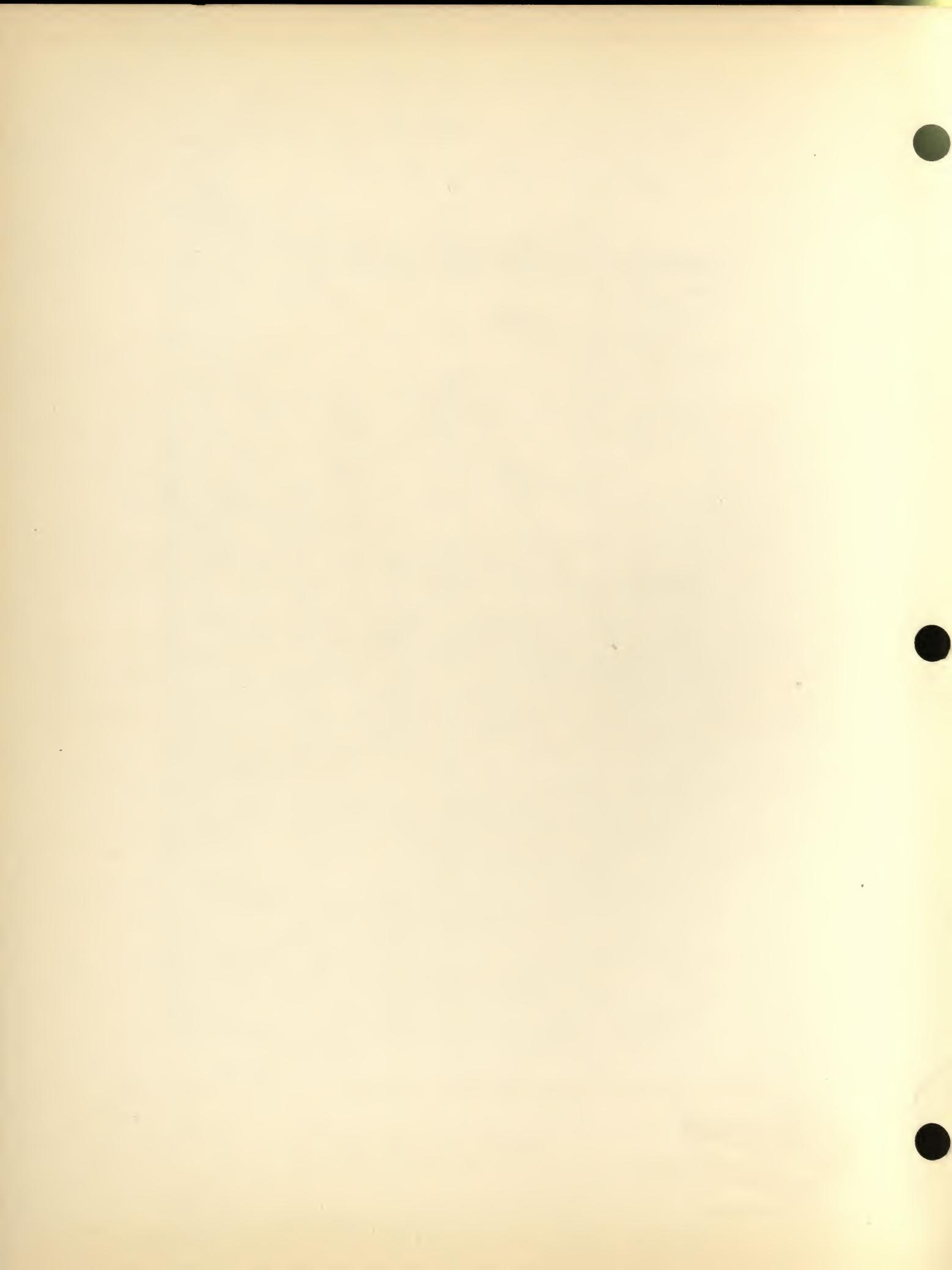
PAGE 33-10
DATE 9-12-39

SUPERSEDED

PAGE
DATE

APPROVED

Property of THE PHILIP CAREY COMPANY; Lockland, Ohio, and is loaned subject to recall, with the understanding that it is not to be used against the interests of the company.





THE PHILIP CAREY COMPANY

Carey
ROCKTEX

DEPARTMENT

INSULATING CEILING
OF APARTMENT BUILDING

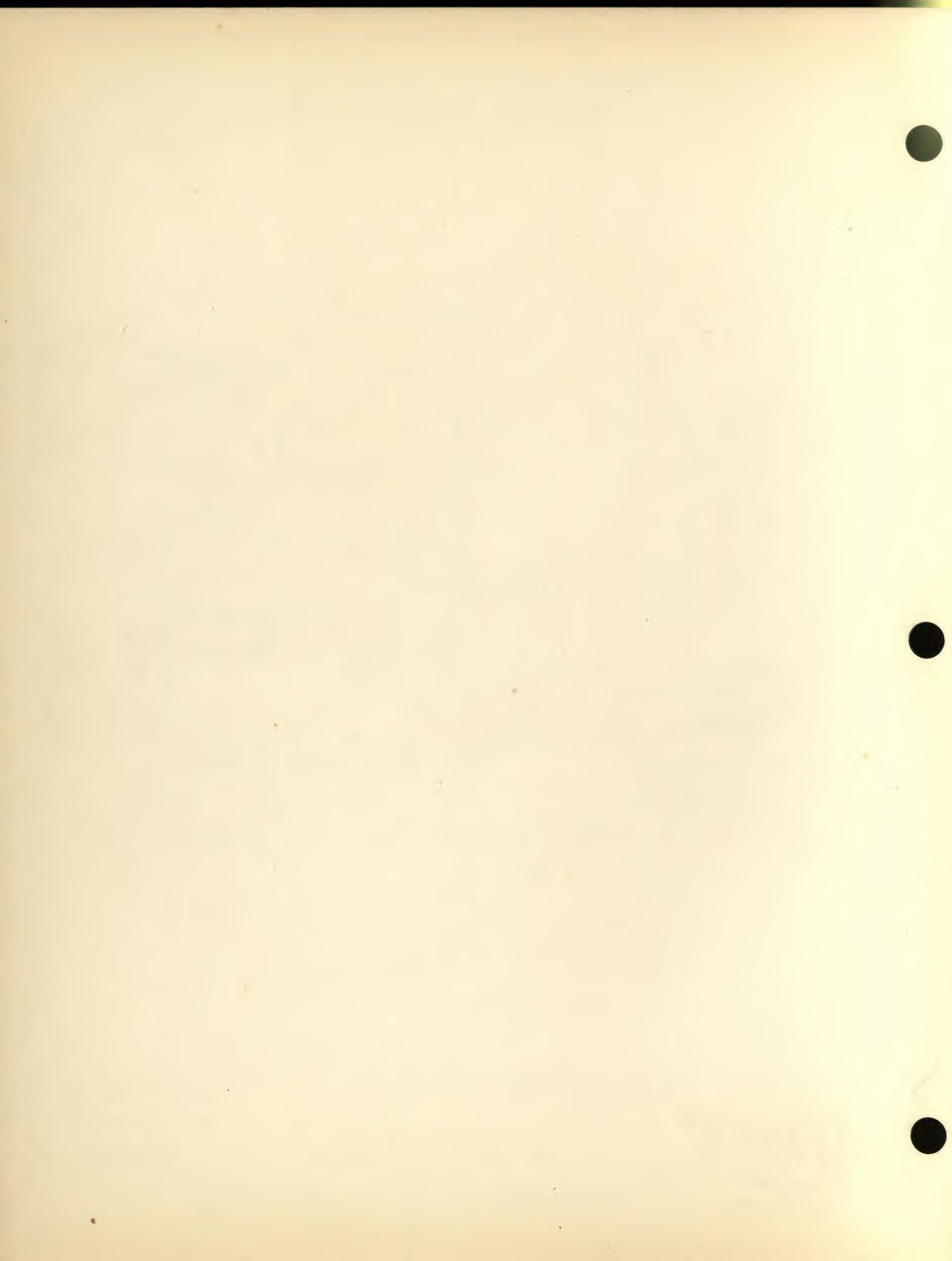
PAGE 33-11
DATE 9-12-39

SUPERSEDING

PAGE
DATE

APPROVED

Property of THE PHILIP CAREY COMPANY; Lockland, Ohio, and is loaned subject to recall, with the understanding that it is not to be used against the interests of the company.



Loose Rocktex is easily applied
in ceilings of old constructions.



Loose Rocktex
fills every
nook and cor-
ner in walls
of new homes.

Loose Rocktex
insulates
walls insuring
a continuous
blanket of
insulation.



No house is too
large to insulate
the Rocktex way.



No house is too
small to insulate
the Rocktex way.

Can you find the insulated home? Heat
passing thru the roof of the uninsu-
lated house melts the roof snow.

THE PHILIP CAREY COMPANY

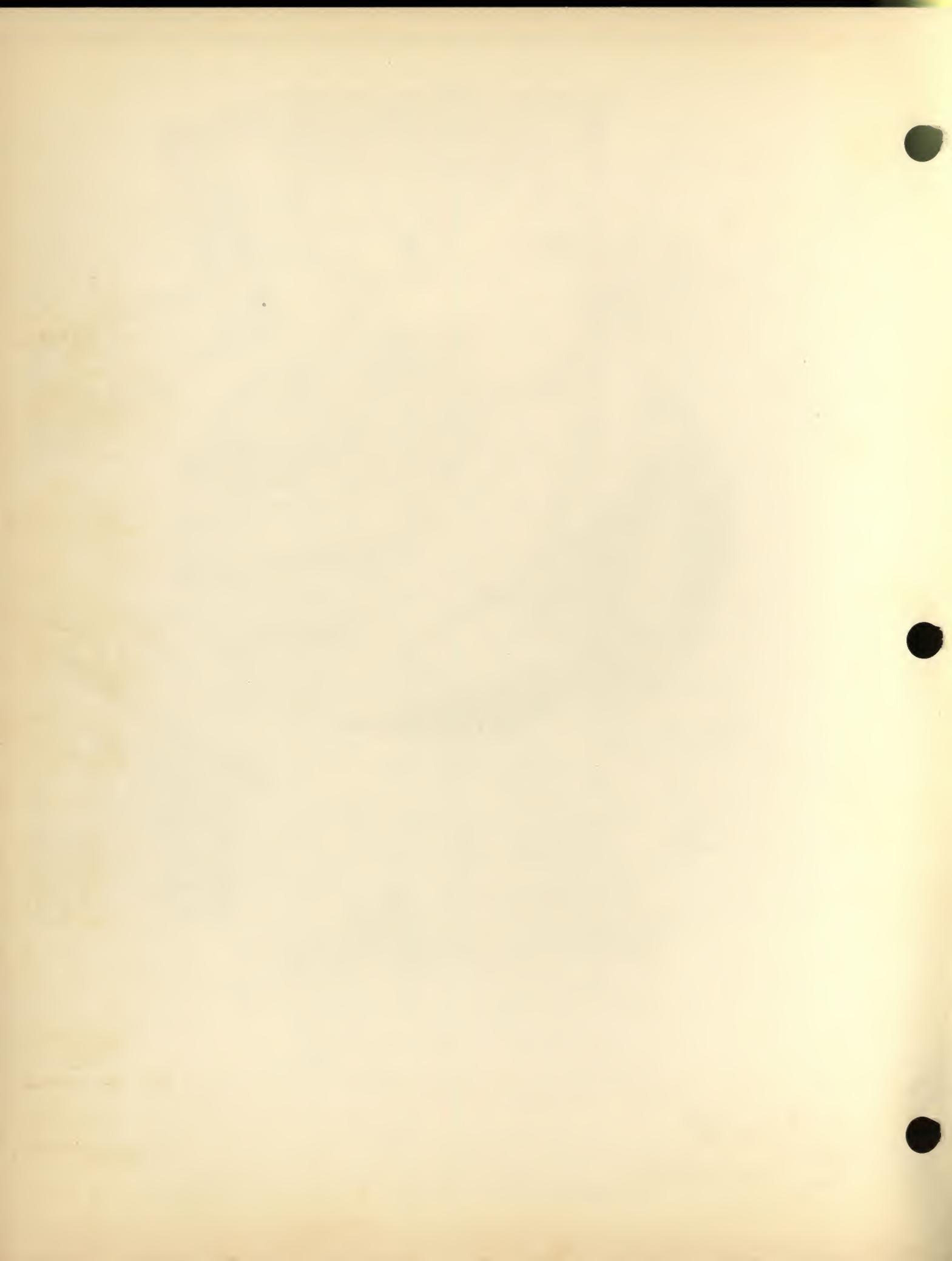
Carey
ROCKTEX

DEPARTMENT

PICTURES OF HAND PACK
APPLICATION

G.W.L.

PAGE	34
DATE	7-20-36
SUPERSEDING	
PAGE	
DATE	



INSULATION APPLICATION

EXISTING HOUSES

HAND PACK METHOD.

Walls - Walls which can be insulated are primarily those with outer facings of shingles, clapboards, brick veneer, or stucco. Any combination of these outer facings may be found on a house. See sketches, page 20.

When opening a shingle or clapboard wall, the top clapboard or three or four shingles, are removed by the use of a nail cutting saw or a shingle ripper (a tool specially designed for this purpose). When the top clapboard is removed, access is then obtained for removing one of the sheathing boards.

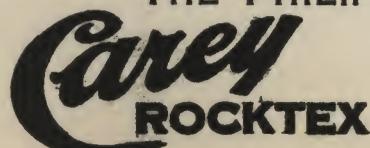
In case of a shingle siding, a hole is cut in the sheathing of sufficient size to take the end of an oblong scoop. When the openings are made, that are available from the ladder scaffold setting, then, a plumb bob should be lowered in each panel, or stud slot to locate bracings or any obstruction that might be located in this hollow wall space. Where obstructions are found, it is then necessary to make openings just below the obstruction.

When opening a brick or stucco wall make openings at such location that they will give access to two stud slots in order to lower the cost of openings. Openings are made in the storm sheathing as mentioned for shingle or clapboard walls.

The stud slots are now ready to be filled. A scoop 15" x 24" with three sides 6" high and the open end tapered to a 12" width, constructed of sheet metal and having a handle on the end opposite the open end, is then filled with granulated wool, and then poured into the wall opening.

It is well to keep a close watch on the amount of material going into each wall panel. If more material is going into this space than is necessary, it is advisable to check and see if the basement plate is closed as it should be. In many cases it may be necessary to place a block between the joists as shown in detail "C" page 20.

THE PHILIP CAREY COMPANY



DEPARTMENT

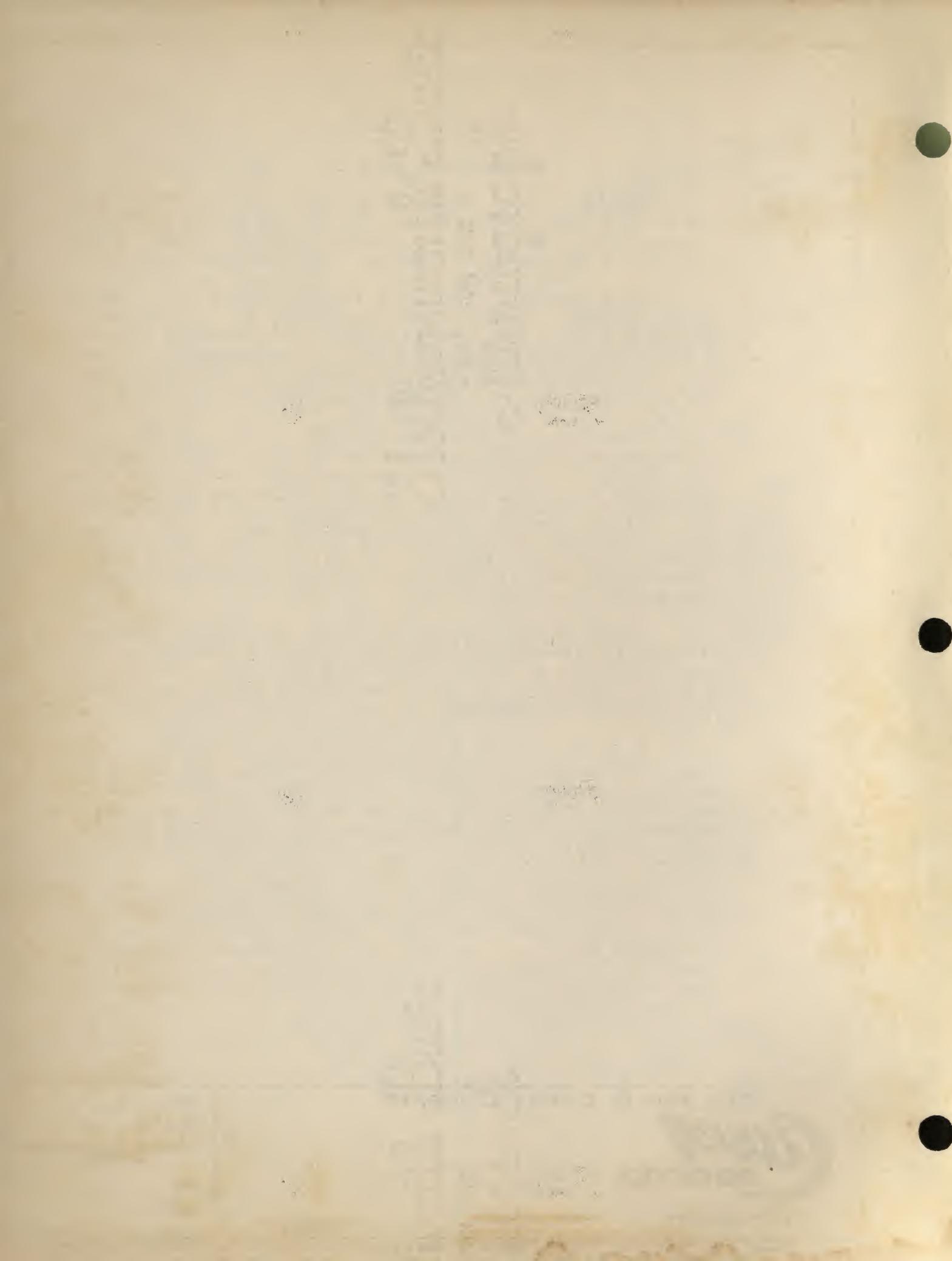
Application -
Hand Pack Method

PAGE 35
DATE 7-29-36

SUPERSIDING

PAGE
DATE

APPROVED



Roof - When insulating the second or third floors of a house having top floor rooms as shown by sketch, where one or more rooms are located above the ceiling joists, it is necessary to get between the roof and walls of the top floor rooms and to insulate the walls of these rooms from the rear; these walls are usually insulated by using loose fibre, packing same to the full depth of the 2" x 4" studs and supporting the material with a suitable backing nailed to the face of the studs. In some cases, 2" x 2" studs will be found; it is advisable to nail 2" x 2" furring strips to these studs and building them out to the 2" x 4" stud dimensions, after which the wall may then be insulated to the recommended wall thick fill. If Rocktex Bats are to be used on the wall instead of the loose fibre insulating wool, the operation is quite simple, inasmuch as the bats are placed between the studs, tight against the lath and plaster and laced in place with #20 gauge annealed galvanized iron wire, spaced on approximately 18" centers.

In most cases it is necessary to make an opening in the roof to gain access to this area in order that the workmen may apply the insulating treatment. This should not create any cause for worry, since the applicator will have experienced workmen on the job, workmen who are competent to take care of roof openings, and closings without leaving any defacing marks on the roof.

The space under the roof deserves much consideration, as proper application of the insulating material in this area goes far in correcting cross air circulation through the home and which is the cause of a great loss of costly produced heat.

The ceiling of the room below this space should be treated with a 4" fill of loose fibre Rocktex Insulating Wool spread on the lath and plaster and between the ceiling joists. Care must be taken to see that wool is banked over the outside walls to a depth of 6" to 8", see detail "A" page 20. Do not fail to pack Rocktex to the full depth of the joists in the walls of the top floor rooms. See detail "A" page 20.

After these spaces have been properly treated as outlined above, the workmen then can gain access to the flat ceiling area of the top floor rooms, and pour

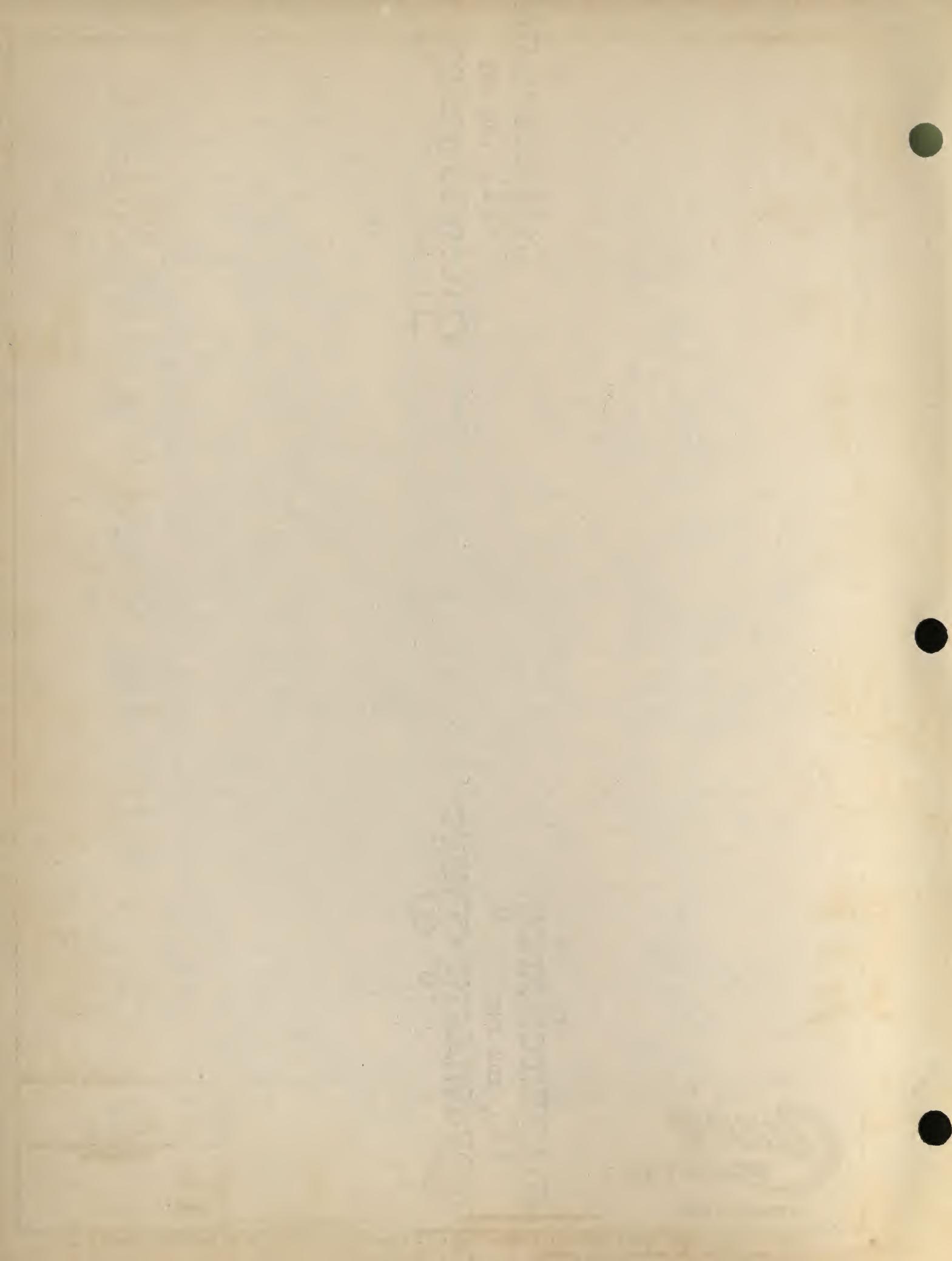


DEPARTMENT

Application -
Hand Pack Method

PAGE	36
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	

APPROVED



granulated Rocktex insulating wool into the slant ceiling area between the lath and plaster and the roofing boards and to the full depth of the rafters. In some cases this thickness may be 6" or 8" depending upon the rafter depth. After the slant area has been filled, then the workmen can insulate the flat ceiling area of these top floor rooms by packing loose fibre Rocktex Insulating Wool over this entire area to a depth of approximately 4".

Extreme care should be taken when installing insulation in the walls and ceilings of homes, to be sure that the insulation does not find its way into the sash weight pockets, located on each side of the windows. Also care should be taken to be sure that insulation will not find its way into partitions where sliding doors are located.

A certain amount of skill is necessary to fill the walls of a home correctly. Skill can be acquired only by actual practice by an intelligent crew. It is wise to have a well trained workman in charge of each of the crews, which you have in the field.



DEPARTMENT

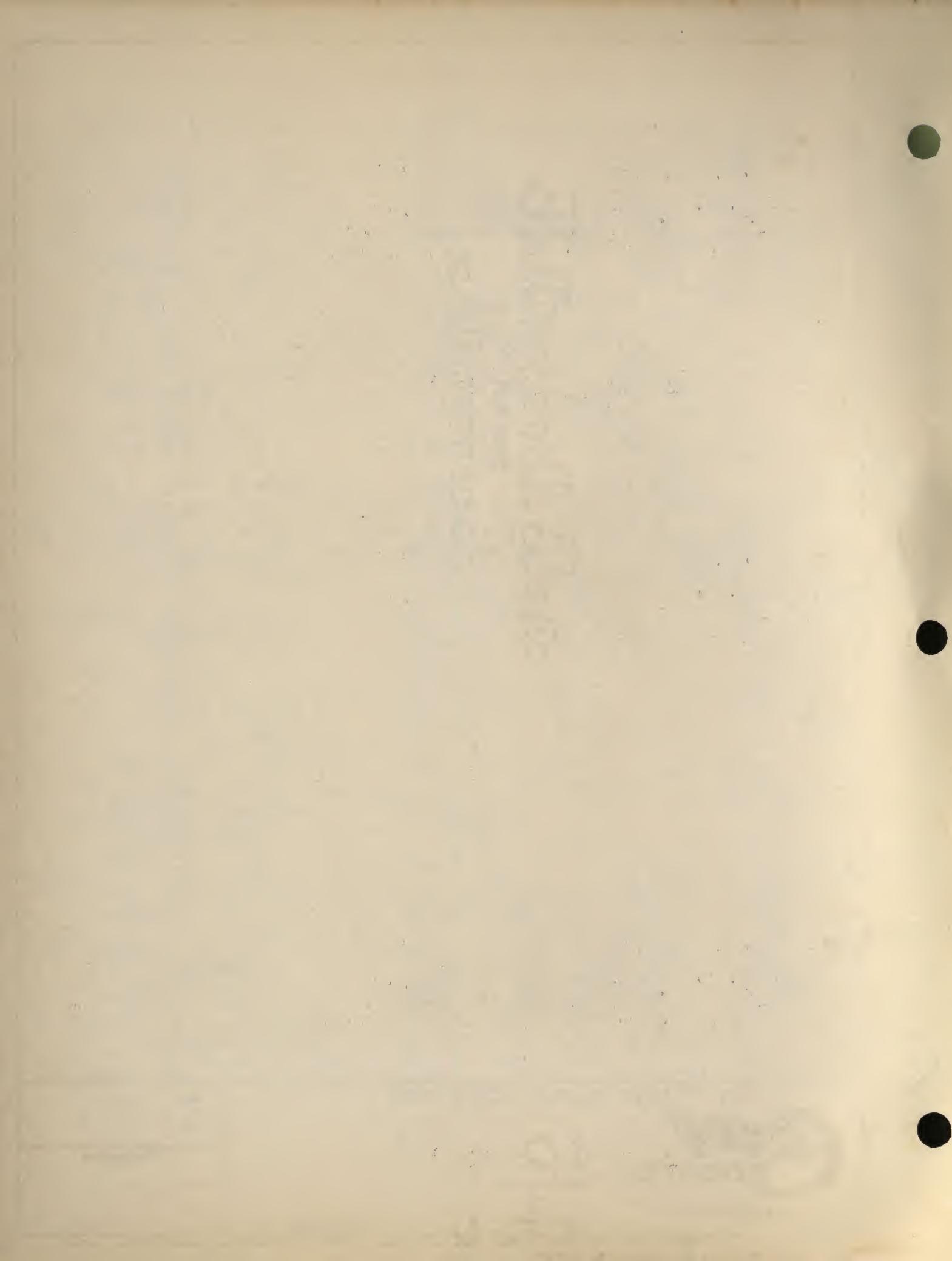
Application -
Hand Pack Method

PAGE 37
DATE 7-24-36

SUPERSIDING

PAGE
DATE

APPROVED





THE PHILIP CAREY COMPANY
Carey
ROCKTEX

DEPARTMENT

APPLYING PAPER BACKED
BATS IN SIDE WALL.
NEW CONSTRUCTION

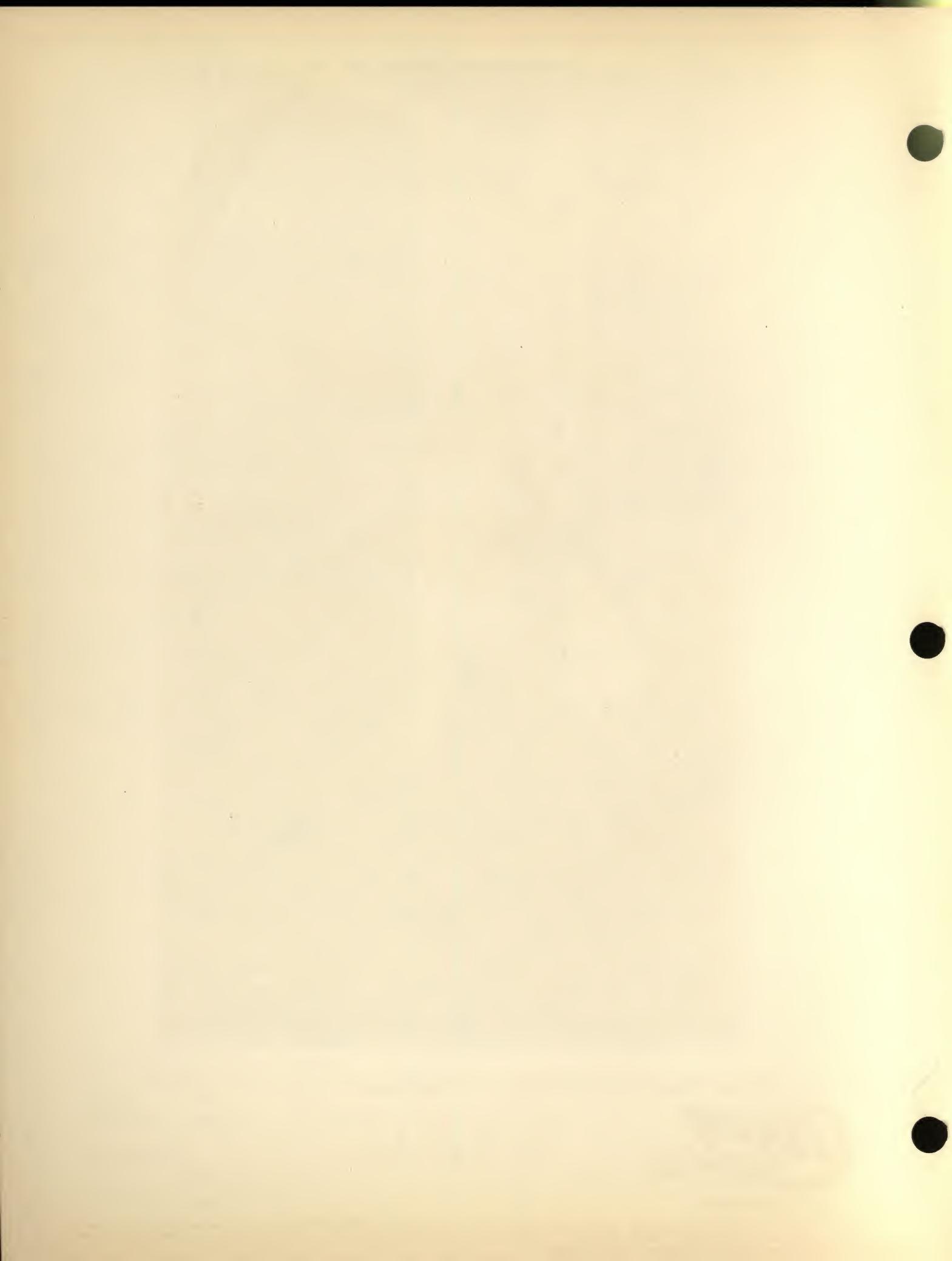
PAGE 37-1
DATE 9-12-39

SUPERSEDING

PAGE
DATE

APPROVED

Property of THE PHILIP CAREY COMPANY: Lockland, Ohio, and is loaned subject to recall, with the understanding that it is not to be used against the interests of the company.





THE PHILIP CAREY COMPANY
Carey
ROCKTEX

DEPARTMENT

APPLYING PAPER BACKED
BATS BETWEEN RAFTERS.

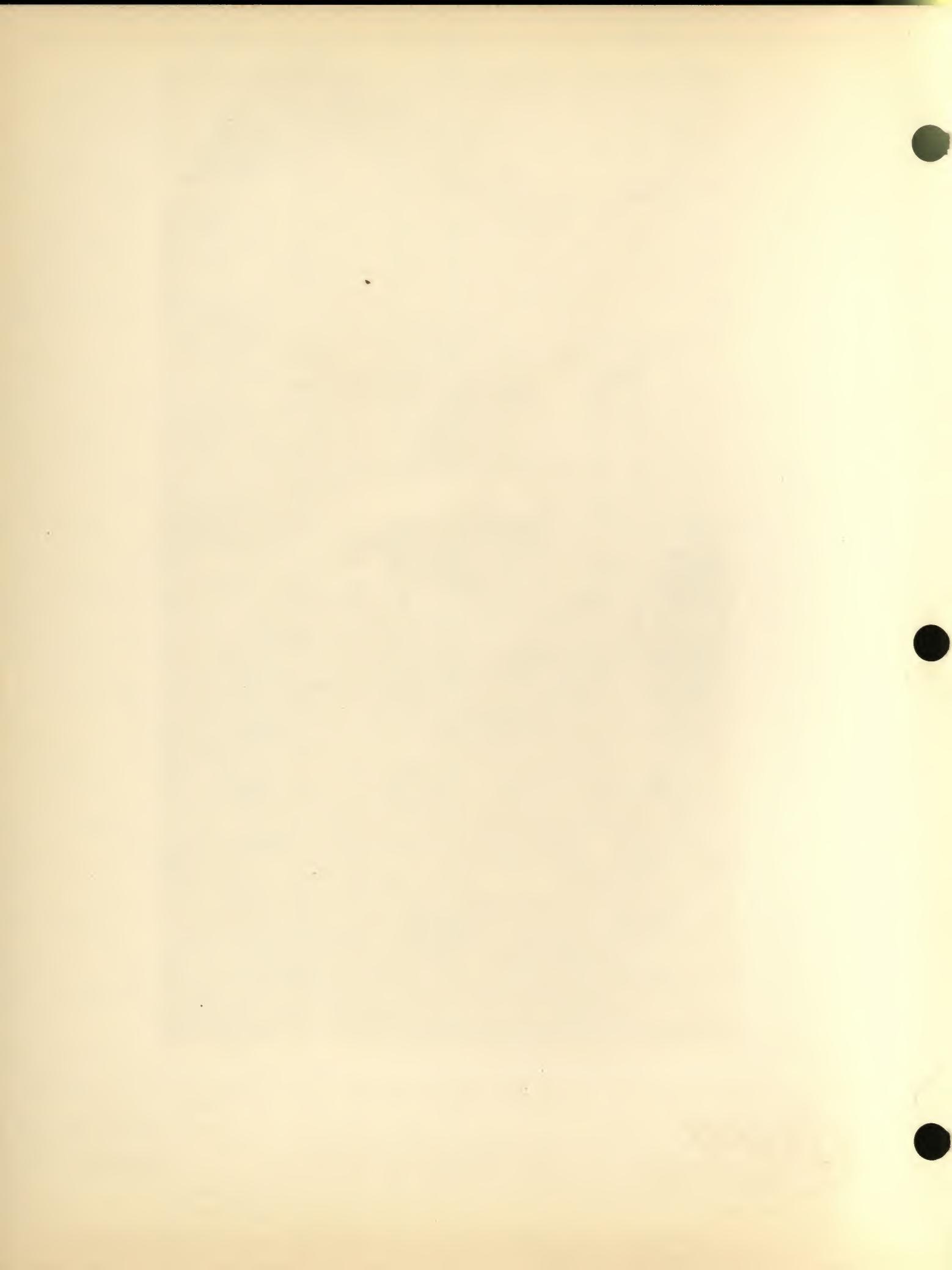
PAGE 37-2
DATE 9-12-39

SUPERSEDING

PAGE
DATE

APPROVED

Property of THE PHILIP CAREY COMPANY; Lockland, Ohio, and is loaned subject to recall, with the understanding that it is not to be used against the interests of the company.





THE PHILIP CAREY COMPANY
Carey
ROCKTEX

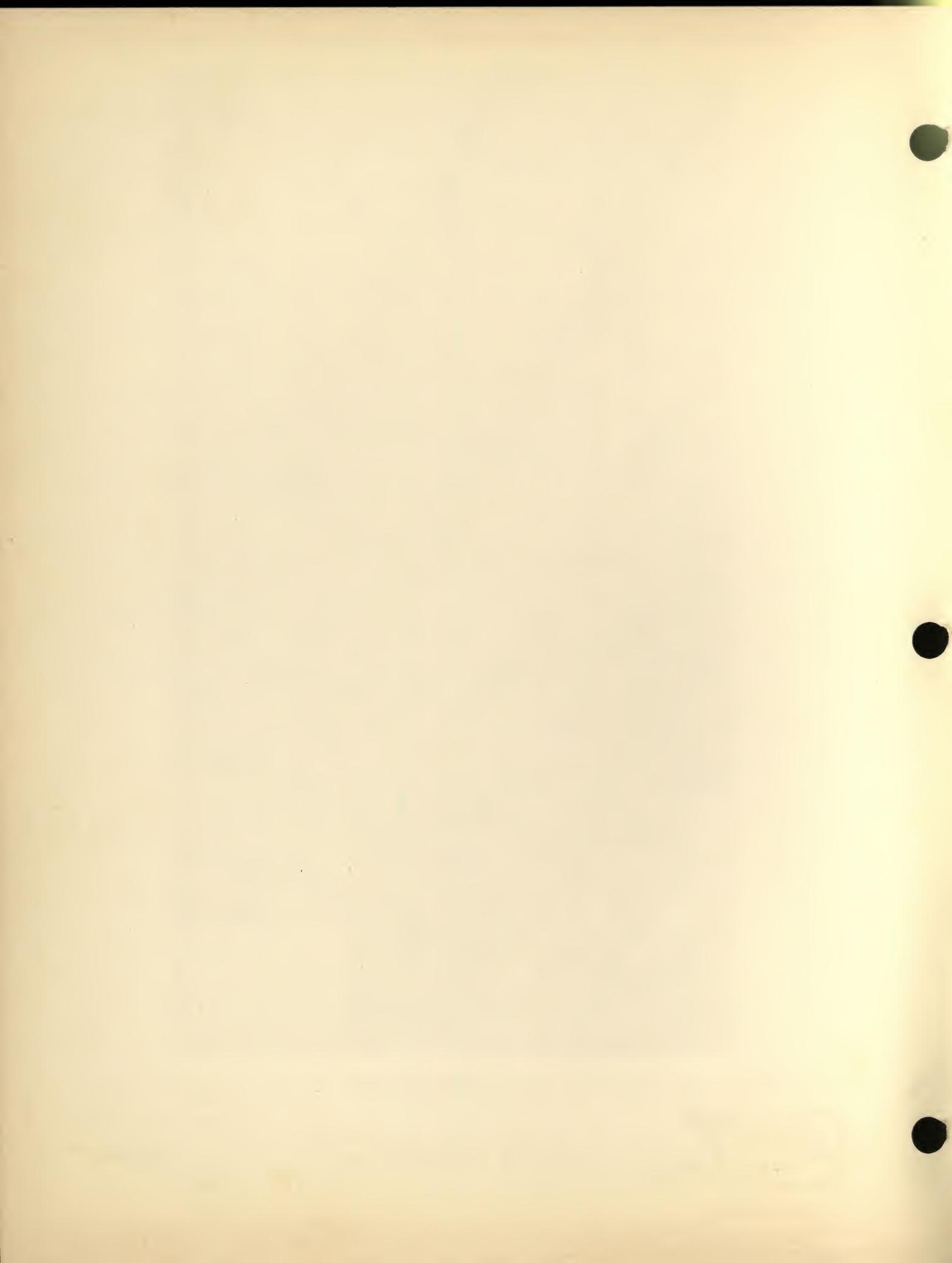
DEPARTMENT

SHOWING COMPLETED BAT
APPLICATION UNDER ROOF.

APPROVED

PAGE 37-3
DATE 9-12-39

SUPERSEDING
PAGE
DATE



METHOD OF ESTIMATING

One bag of Carey Granulated should be spread to cover 17 sq. ft. of flat attic area, 4" thick and 13 sq. ft. of wall area, when filled in the space of a 2" x 4" wall.

It is well to estimate a deduction of 10% for joist area in order to know the actual area to be insulated and 15% deduction from wall areas after the windows, doors and fireplace have been deducted.

Wall Area

22' wide x 40' long x 20' high	=	2,480 sq. ft.
Loss windows and doors	=	<u>384 sq. ft.</u>
Net wall area	=	2,096 sq. ft.

Ceiling Area

22' x 40'	=	<u>880 sq. ft.</u>
Net area to be insulated	=	2,976 sq. ft.

Estimating Costs

Walls

2096 x 85% (15% deduction for studs)	=	
17	No. bags @ per bag	= $\frac{1}{4}$

Ceiling

880 x 90% (10% deduction for joists)	=	
13	No. bags @ per bag	= $\frac{1}{4}$

Labor

Cartage (Delivery & Pickup)

Supervision

Insurance

Overhead

Miscellaneous

Total Cost

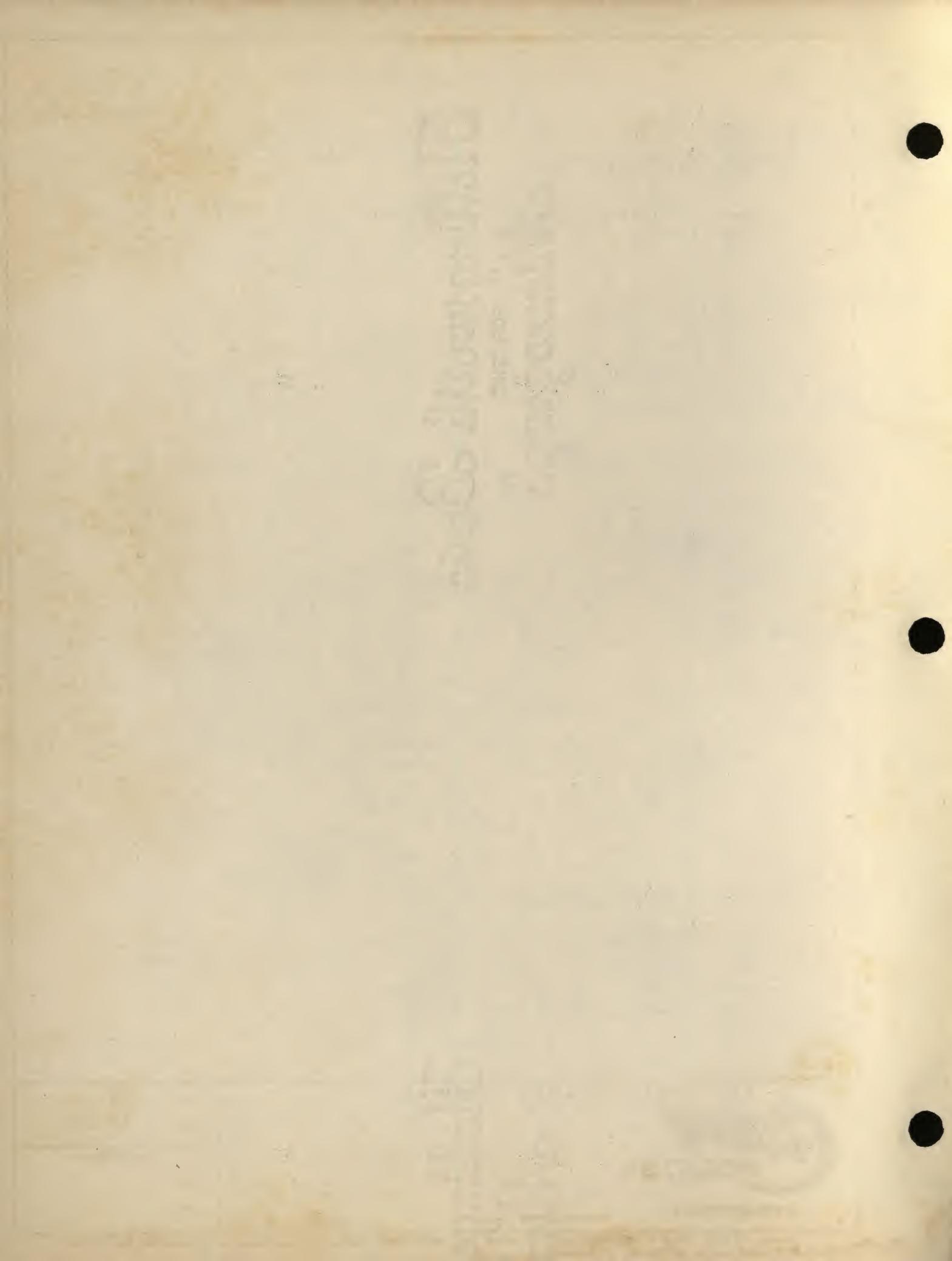
The above method is just an outline, and the method may be changed to suit local conditions of the contractor.



DEPARTMENT

Method of Estimating

PAGE	38
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	



SELLING PRICES

The selling price is entirely up to the contractor and dependent upon the amount of overhead and profit that he demands. For a matter of several years, the following schedule was maintained, and today many follow this schedule, and some are even higher.

The following prices are based upon the entire square footage of the attic area or outside wall area.

Schedule of the average minimum prices for nominal 4" thickness in existing structures only

	<u>Min. Price Per Sq. Ft.</u>
<u>1. Flat Work</u>	
A. Open work with no under cover work	\$.13
B. Closed flat work, rough or single floor	.14
C. Closed flat work, double flooring one finished floor	.16
<u>2. Wall Work - Standard Construction 2" x 4" framing</u>	
A. Shingle	.14
B. Clapboard	.14
C. Stucco	.16
D. Brick Veneer	.16
E. Stone Veneer	.16
F. Partitions (interior)	.14
<u>3. Rafter and Special Attic Work</u>	
A. Finished Rafters	.14
B. Unfinished rafters (paper or board extra)	.14
C. Finished rakes same price as provided in item No. 3-A	
D. Knee walls same price as provided in items No. 3-B	
E. Dormers - roofs, walls and ceilings of shall be priced in accordance with above schedules for these types of work.	
F. In cases of flat work where part is open blowing and part closed blowing, the prices provided in the schedule for each type of work shall be charged for exact areas.	
G. Solariums and sun porches are to be figured on net areas.	.16



THE PHILIP CAREY COMPANY

Approximate Selling Price
for Old Home Insulation

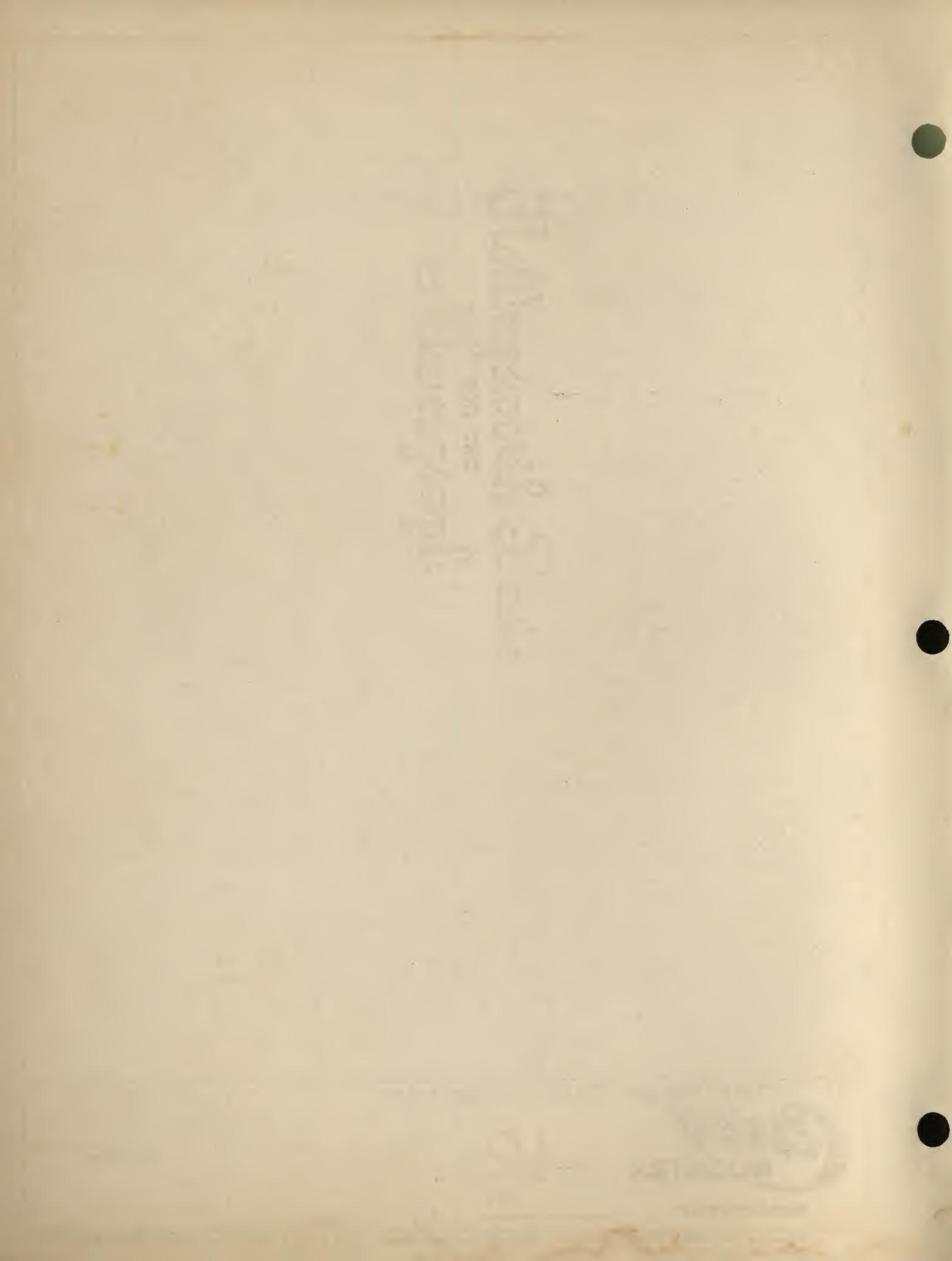
DEPARTMENT

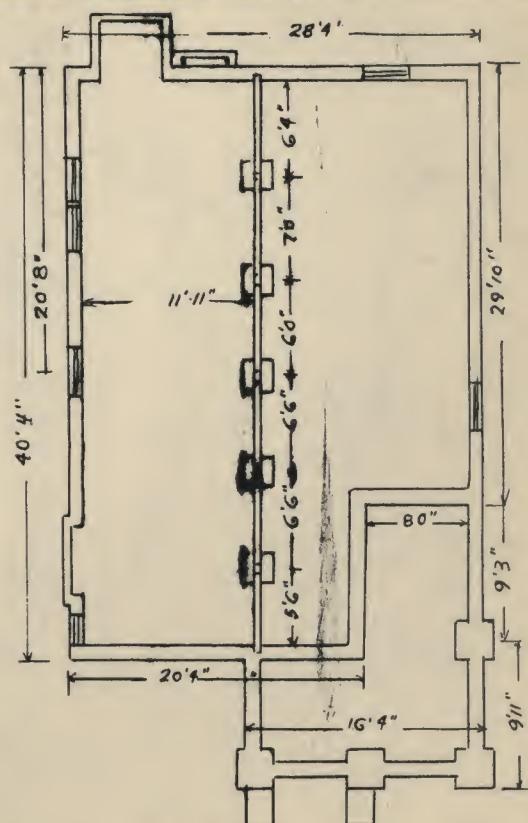
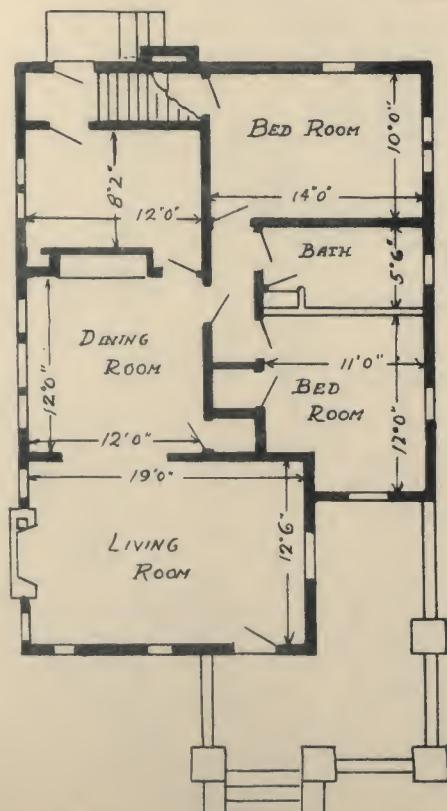
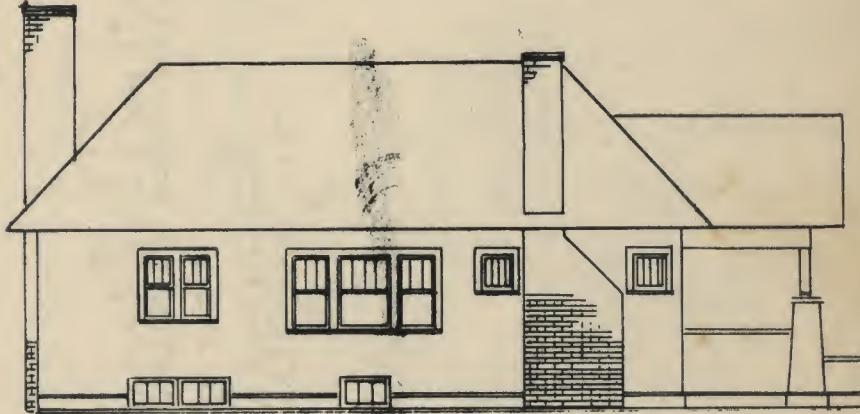
APPROVED

PAGE 39
DATE 7-24-36

SUPERSEDING

PAGE
DATE





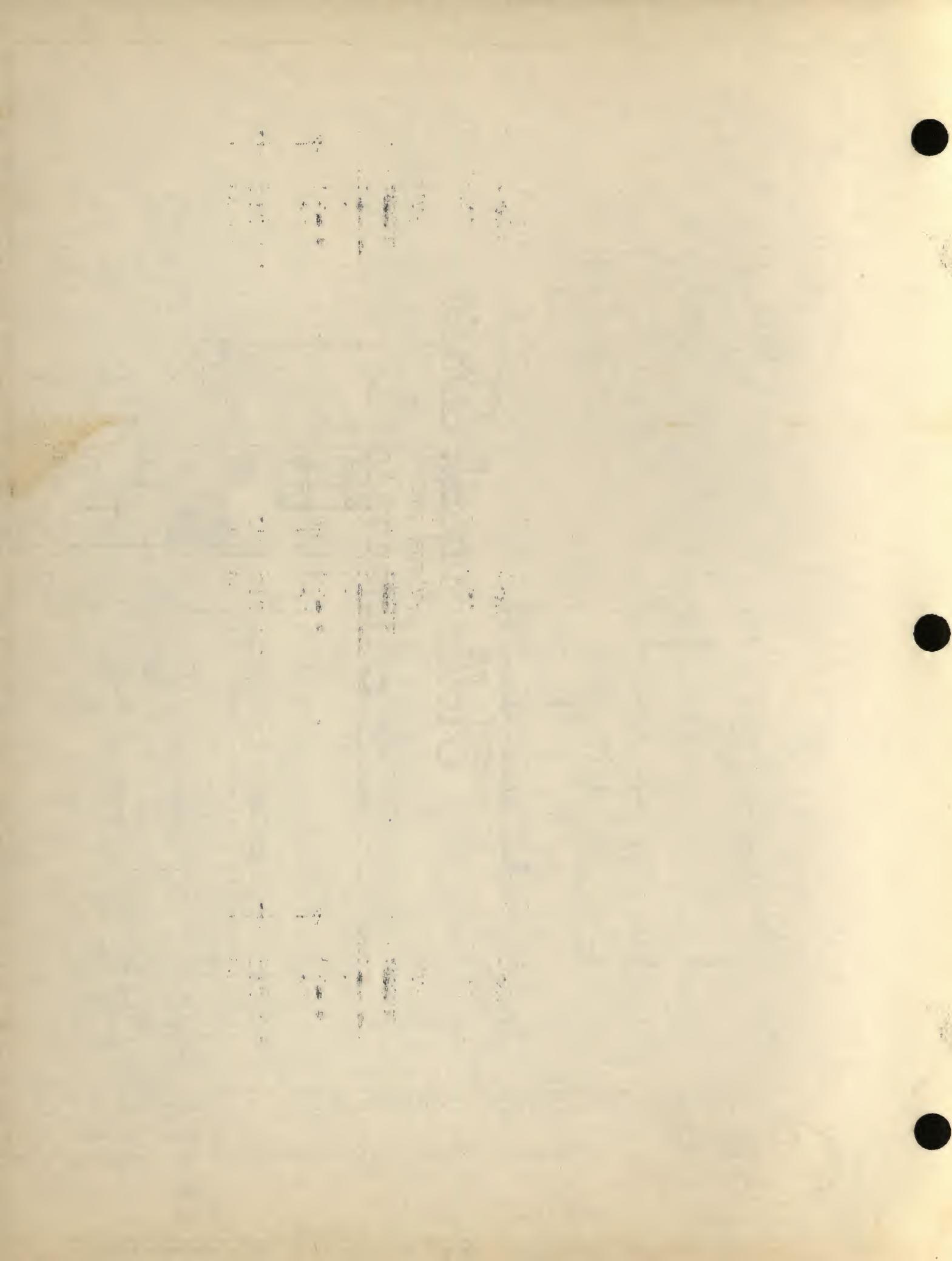
THE PHILIP CAREY COMPANY

Carey
ROCKTEX
DEPARTMENT

RADIATION AND FULL SAVINGS
ON A HOUSE

G.W.L.

PAGE	40
DATE	7-20-36
SUPERSEDING	
PAGE	
DATE	



Estimating Fuel Saving
and the Required Radiation
for a Typical Home

The method of determining the fuel saving and amount of radiation required in a typical residence as shown on page 40 is outlined below. This method is a very brief procedure of calculating that will be found to be quite accurate.

The cost of insulating the home shown on page 40, providing the house is already built, was calculated on the basis of 13¢ per square foot for ceiling, or roof insulation and 14¢ per square foot for the cross wall area. This makes a total price of \$316.00 for an application of Rocktex in this typical residence.

DATA

<u>Area</u> -	Walls	1005 sq. ft.
	Ceiling	1060 sq. ft.
	Glass	266 sq. ft.
	Volume of Air	9010 cu. ft.
<u>Time</u> -	Heating Season	212 Days
	Inside Temperature 70° Fahr.	17 hours per day

Assume location as New York - Average temperature difference 40° Fahr.

3600 heating hours per season.

Assume two air changes in house per hour.

Heating System - Hot Water

Value of hot water radiation is 156 B.T.U. per sq. ft.

Fuel - Coal - 15,400,000 B.T.U.'S per ton.
(14,000 x .55 x 2,000)



DEPARTMENT

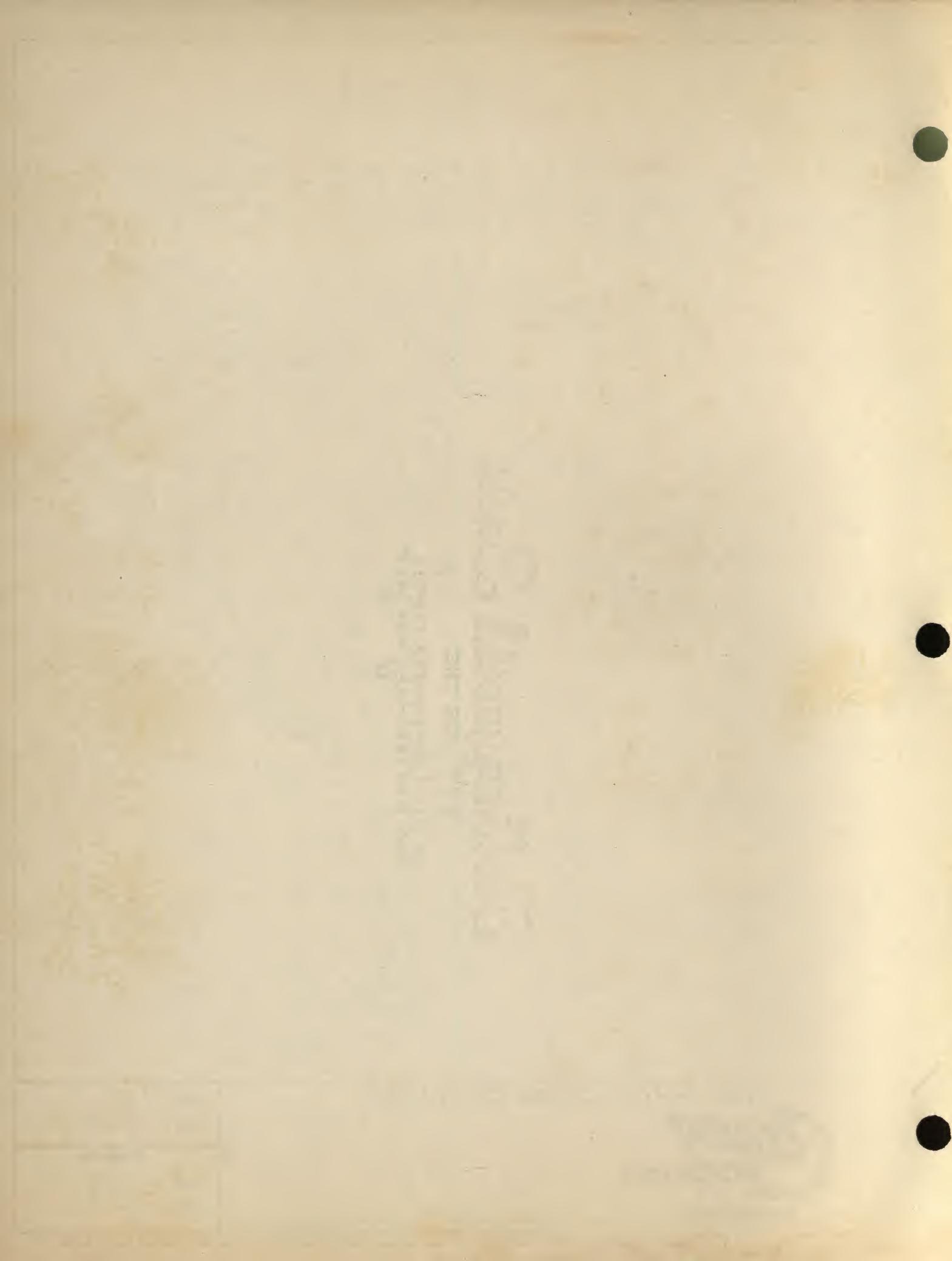
Estimating Fuel Saving
for a Typical Home

PAGE 41
DATE 7-27-36

SUPERSEDED

PAGE
DATE

APPROVED



Construction Resistance -

<u>Ceiling</u>	<u>Uninsulated</u>	<u>Insulated</u>
Outside Surface 15 H.P.H.		
Wind	.17	.17
Asbestos Shingles	.17	.17
Sheathing and Rfg. Paper	1.22	1.22
Air Space	1.00	
3-5/8" Rocktex (15% stud area)		11.70
Lath and Plaster	.40	.40
Inside Surface	.61	.61
	3.57	14.27
	Kc- .28	KcI- .07

Walls

Outside Surface 15 H.P.H.		
Wind	.17	.17
Wood Sheathing -		
Bldg. Paper - Siding	2.00	2.00
Air Space	1.00	
3-5/8" Rocktex (15% stud area)		11.70
Lath and Plaster	.40	.40
Inside Surface	.61	.61
	4.18	14.88
	Kw- .239	KwI- .067

Symbols for Computation -

- H - Total heat in B.T.U.'S
- W - Wall surface in sq. ft.
- G - Glass Surface in sq. ft.
- C - Ceiling surface in sq. ft.
- V - Volume of air in cu. ft.
- T₁ - Room Temperature
- T_o - Outside Temperature
- Kw - Heat transmission constant for walls
- Kc - Heat transmission constant for ceilings
- Kg - Heat transmission for glass
- Hw - Heat in B.T.U. transmission through wall
per hr. or KwW (T₁ - T_o)
- Hg - Heat in B.T.U. transmission through glass
per hr. or KgG (T₁ - T_o)
- Hv - Heat in B.T.U. lost by infiltration per
hr. or .02VN (T₁ - T_o)
- Hc - Heat in B.T.U. transmission through ceiling
per hr. or KcC (T₁ or T_o)

THE PHILIP CAREY COMPANY

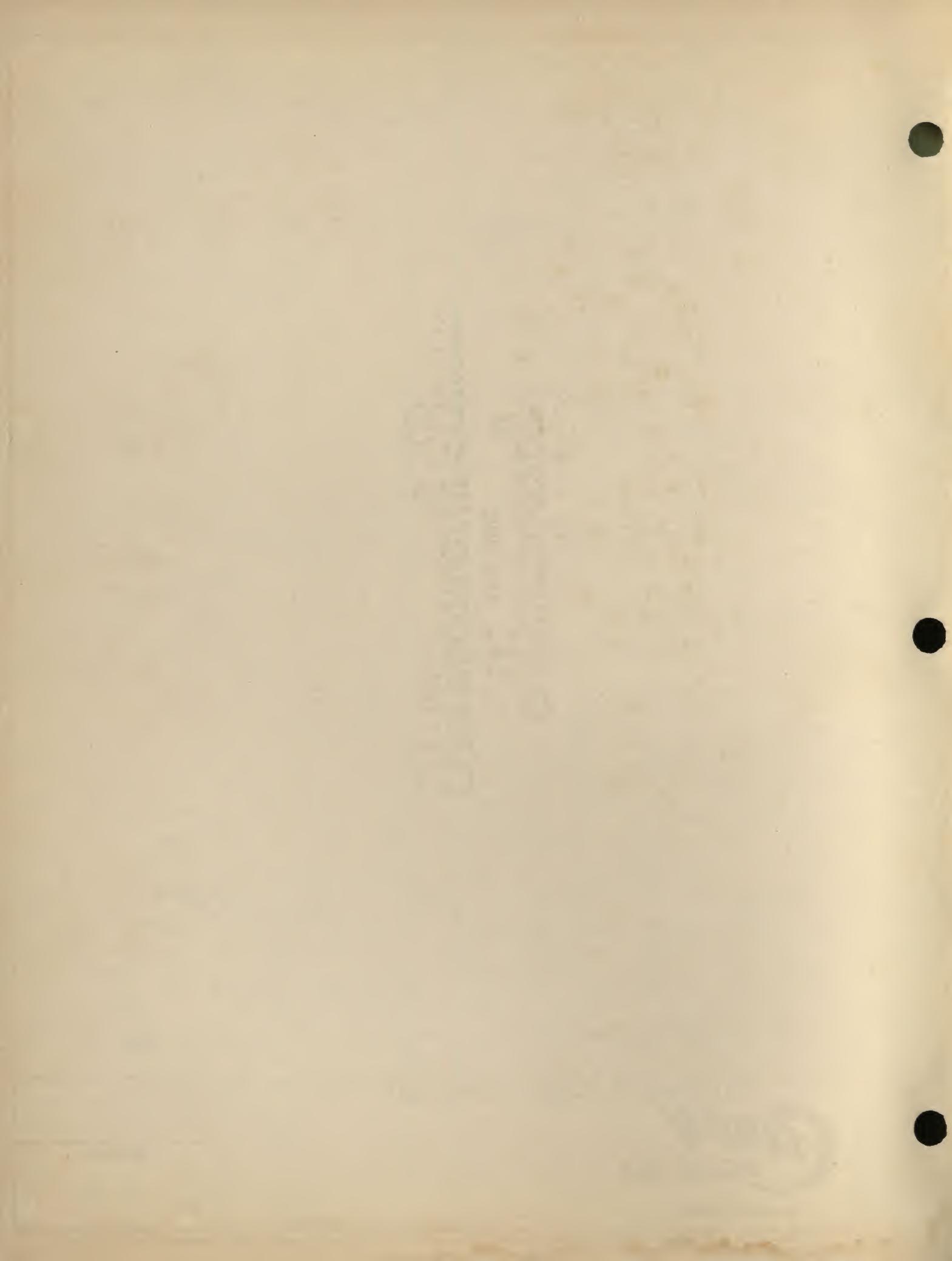


Estimating Fuel Saving
for a Typical Home

DEPARTMENT

APPROVED

PAGE	42
DATE	7-27-36
SUPERSEDING	
PAGE	
DATE	



Computation -

	Uninsulated	Insulated 3-5/8" Rocktex
Wall-FRAME-Wood Siding		
Ceiling-Asbestos Shingles		
Note-See Construction Resistance		
Kw	.24	.067
Kg	.56	.56
Kc	.28	.07
Hw	7,236	2,020
Hg	4,468	4,468
Hc	8,904	2,226
Hv	10,800	10,800
Total	31,408	21,465
10% for Exposure	3,140	2,146
Total loss per hr. in B.T.U.'S	34,548	23,611
Coal in tons per season	8.07	5.5
Radiation Required in sq. ft.	222	150

$$\text{Saving through ceiling} = \frac{.28 - .07}{.28} = 75\%$$

$$\text{Saving through walls} = \frac{.24 - .067}{.24} = 73\%$$

$$\text{Saving in Radiation} = \frac{222 - 150}{222} = 33\%$$

$$\text{Saving in Coal} = \frac{8.07 - 5.5}{8.07} = 32\%$$

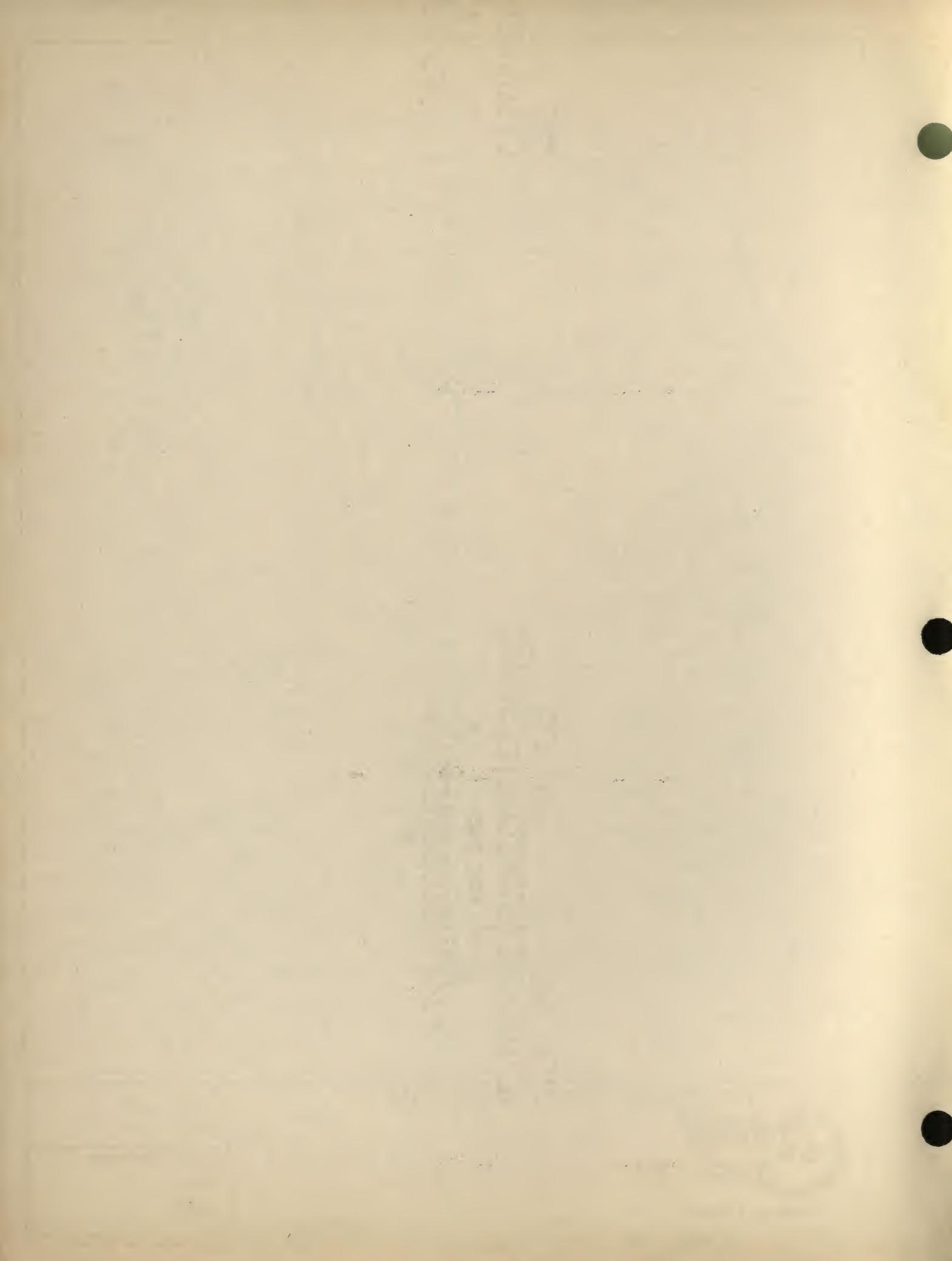
Referring to the above table of calculations with reference to the coal saved per season, we find that through an application of Carey Rocktex Insulating Wool we have a saving of 2.57 ton over the uninsulated home. Now let us assume that the cost of coal per ton is \$12.00. This means that we have then affected a saving of \$30.84 per heating season. The cost of insulating the walls and ceiling of this home, as mentioned above, was \$316.00; therefore, the percent of return on the original investment in home insulation would be approximately 10% yearly. What else could a home owner put in his home that would give him a return on his original cost for the installation that home insulation gives? Of course, fuel savings are an important item, yet the comfort and healthful indoor conditions that are provided with an application of insulation in a home cannot be overlooked.



DEPARTMENT

Estimating Fuel Saving
for a Typical Home

PAGE	43
DATE	7-27-36
SUPERSEDED	
PAGE	
DATE	



QUICK FACTS ABOUT CAREY ROCKTEX HOME INSULATION

1. Question: Where does heat escape from a house?

Answer: Heat leaks from a house through the following channels. Walls, roofs, cracks, particularly around doors and windows, through window panes and doors, and through faulty construction. A certain amount of heat is also lost through the floors into the basement, and where rooms are over an unexcavated area.

2. Question: How much heat is lost through each of the above channels mentioned?

Answer: The heat loss from the average uninsulated house during winter months is distributed approximately as follows, as estimated by E. T. Katz, Associate Professor, University of Illinois; 43% goes directly through walls, floors and roofs, 27% through leaks at cracks and crevices. 30% is conducted through windows and doors. The heat loss through doors and windows cannot altogether be prevented, although good weatherstripping, storm doors and storm windows will somewhat help. Our important consideration is the big preventable heat loss - the loss through the roof - and sometimes the floor and walls.

3. Question: How does heat pass through the walls and roof of the home?

Answer: Heat passes through the walls and roof of a home by radiation, conduction and convection.

A practical example of each of these is as follows:

Radiation. When you stand so that the sun shines on you, you are warmed by the radiated heat from the sun. When you step into the shade, you feel cooler

THE PHILIP CAREY COMPANY



DEPARTMENT

Quick Facts

PAGE

44

DATE

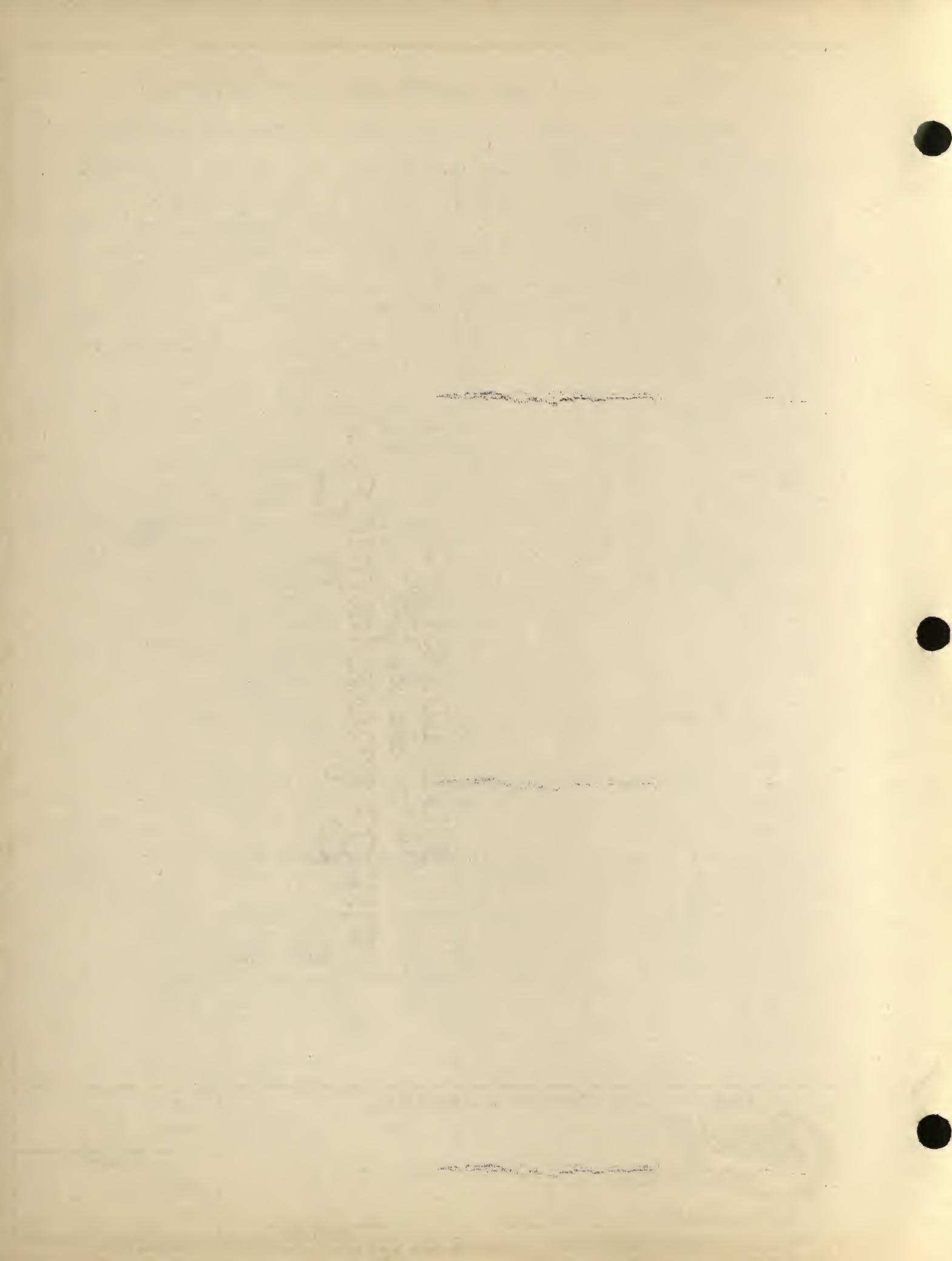
7-24-36

SUPERSEDING

PAGE

DATE

APPROVED



because this radiated heat cannot strike you and give you its heat.

Conduction. If you were to hold a steel rod in the fire, the heat is conducted by the metal, a direct material path through which it flows up to your hand.

Convection. Heat from a radiator warms up the air and forms convection currents. These convection currents may be followed by blowing smoke over the radiator to see the effects of the current.

4. Question: Is dead air in the walls of my home a good insulation?

Answer: May people have been misled by this false impression. Dead air does have certain insulating value, like the space between the walls of a thermos bottle. The air in the hollow wall space of your home is not dead air. This air is continually circulating. Rough timbers used in construction cannot seal these wall spaces. Remember, definite dead air spaces must be maintained to secure any insulation value whatsoever.

5. Question: Will a good building paper give good insulation?

Answer: Building paper is used mainly as a precaution against moisture seepage into the walls of your home, and to act as a wind break in stopping wind from coming through the cracks, which are in the outer wall. Building paper can in no way be termed as an insulating material for the home.

6. Question: Would weatherstrips and storm windows help my home?

Answer: Weatherstripping of doors and windows will reduce to a minimum the draft,

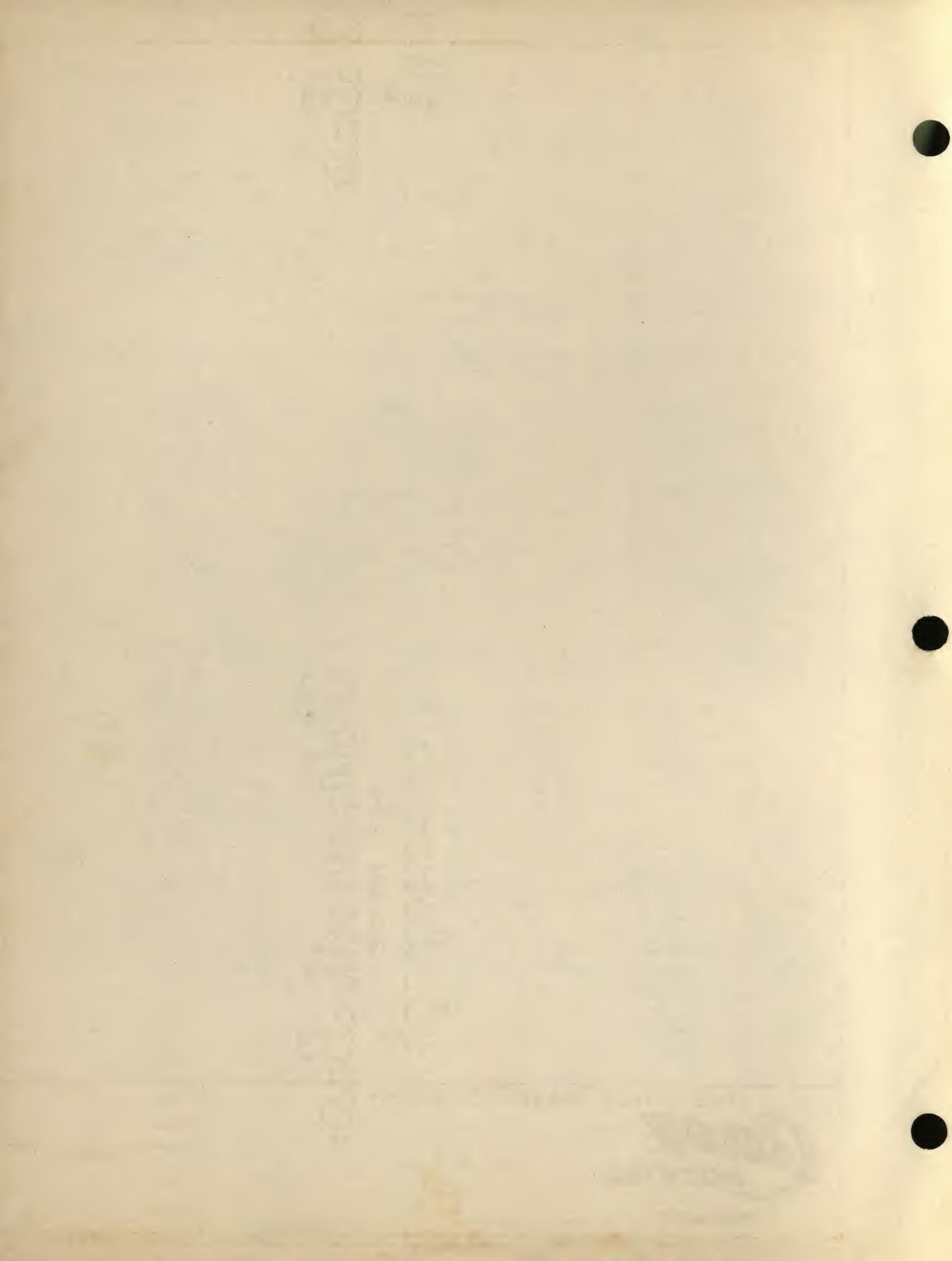
THE PHILIP CAREY COMPANY



DEPARTMENT

Quick Facts

PAGE	45
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	



caused by outdoor air blowing through the cracks and crevices. Storm windows will give a great help in stopping the heat loss through glass.

Remember, storm windows nor weather-stripping will aid you in stopping the heat loss through the wall and roof construction.

7. Question: Why use Rocktex Insulating Wool for my home?

Answer: Rocktex is the most efficient home insulation known today. Rocktex is the combination of fine, silky-like fibres, which entrap millions of tiny dead air cells. The passage of heat through this insulation is effectively eliminated.

A good example of this may be shown by placing a sample of Rocktex on a lighted jet on the kitchen gas range. On this pad of wool, (make about 1" thick) place an ordinary match. See how long it takes this intense heat to light the match.

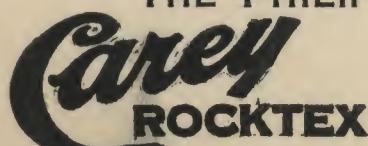
8. Question: What advantage does Carey Rocktex have?

Answer: Carey Rocktex Insulating Wool, being 100% mineral, and containing no vegetable or animal matter, is as permanent as the material from which it is made. It will not decompose or corrode. It is absolutely fireproof, and highly moisture resisting.

9. Question: How does the efficiency of Rocktex compare with other insulations?

Answer: Most insulation materials formerly used, were only 1/2" to 1" thick, and their insulation value could never approach the value obtained by Carey Rocktex Insulating Wool. Carey Rocktex, when properly installed will give three to eight times as efficient insulation.

THE PHILIP CAREY COMPANY

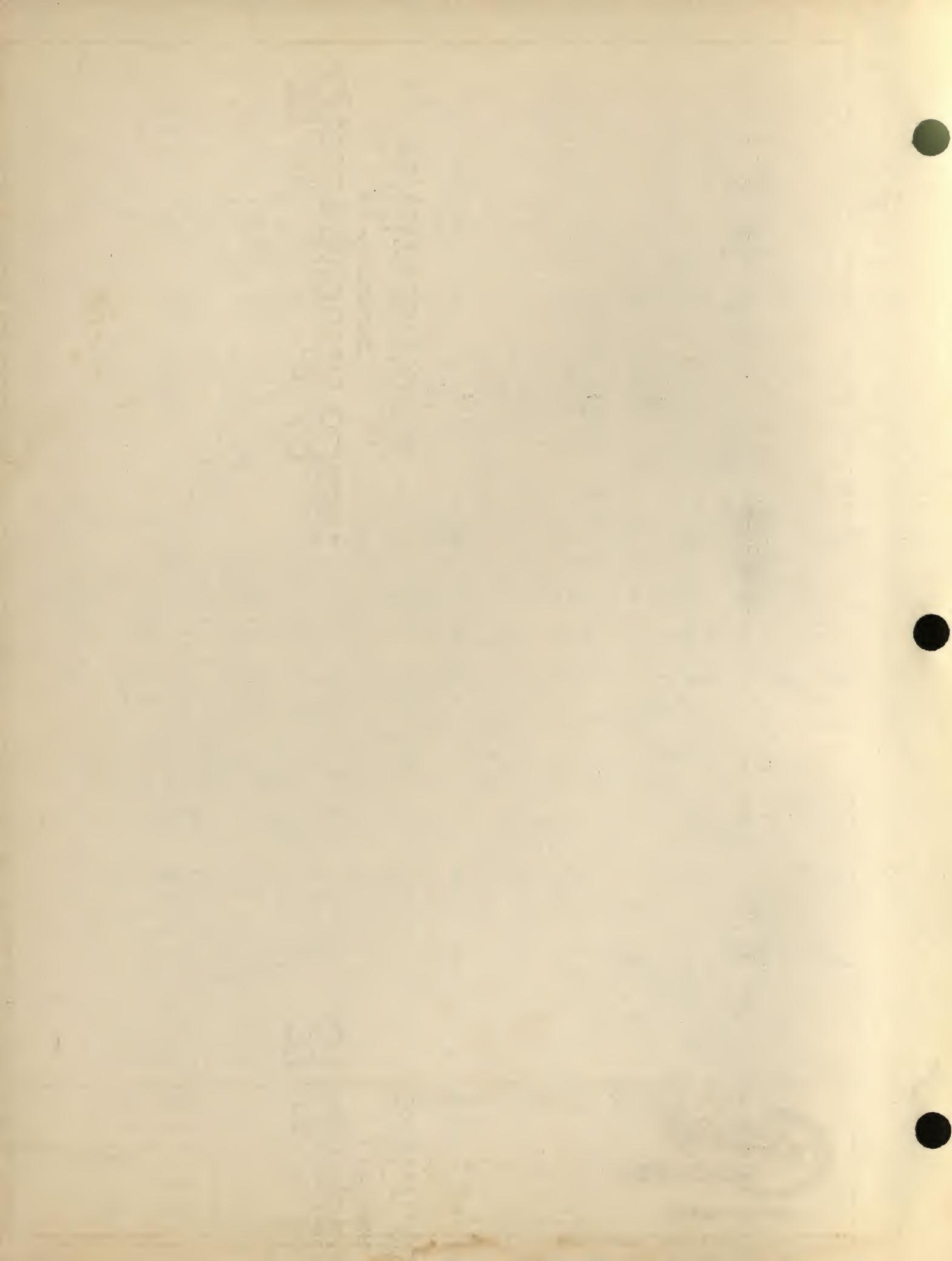


DEPARTMENT

Quick Facts

PAGE	46
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	

APPROVED



10. Question: Will Carey Rocktex stop drafts?

Answer: Rocktex prevents the loss of heat through the walls and roof of a home, the air currents which are usually found in an uninsulated house are eliminated. Rocktex assures uniform temperatures throughout the house, the uniformity in temperatures on the different floors prevents this circulation of air.

11. Question: Can any house be insulated?

Answer: The roof or attic of any home may be thoroughly insulated by the Carey Rocktex Blowing Method, or the Carey Rocktex Hand-Pack Method. Of course it is practically impossible to insulate the walls of a furred out structure. However, any stucco, clapboard, shingle or brick veneered house may be insulated.

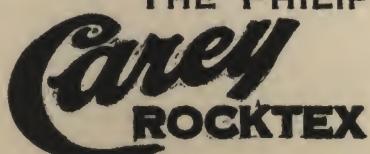
12. Question: How can a brick veneered or stucco house which is already built, be insulated?

Answer: Insulating by the Blowing Method. Openings are made in the outside walls after locating the spacings between the studs. A brick is removed, or holes drilled into the stucco. When these openings are made, the space is blown full of Carey Rocktex Wool. The sheathing is then replaced, and the brick replaced, or stucco holes filled, leaving the outside appearance of the house just as before. See page 30.

The operation is the same using the hand-pack method except that Rocktex is poured in place instead as described above. See page 35.

In the case of stucco houses, it is often necessary to repaint the outside surface of the stucco or treat the new stucco in some manner to weather it, so that it does not stand out as a patched job.

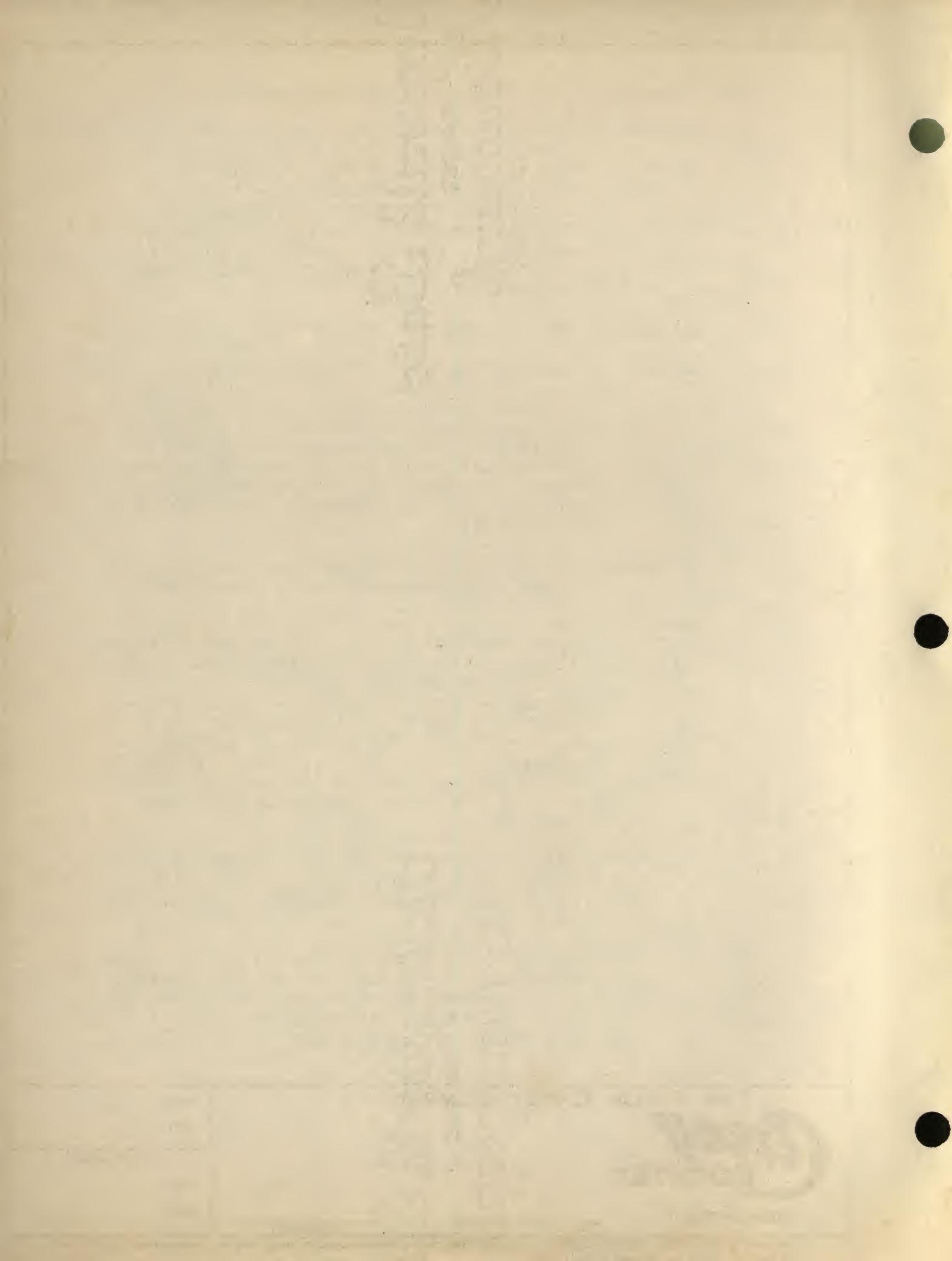
THE PHILIP CAREY COMPANY



DEPARTMENT

Quick Facts

PAGE	47
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	



13. Question: How is a clapboard for shingle house insulated?

Answer: The method is practically the same as above. The workmen remove the necessary shingles, or the strips of clapboarding to reach the sheathing. After the openings are made, and the walls are blown full of Rocktex, the siding or shingles are replaced.

The hand-pack operation is the same as described under Answer 12. See page 47.

14. Question: How do you insulate the attic or roof?

Answer: In the case of an open attic without flooring, Rocktex is blown or packed between the joists over the top floor ceiling. If the attic is floored, a few boards are raised, and the insulation is blown or hand-packed under them on top of the lath and plaster. If there is a finished room in the attic, the ceiling and walls are insulated in the same way.

15. Question: Is the filling of the entire wall space assured?

Answer: Before Rocktex is installed into any opening, its depth is tested by a plumb-bob. If there are any obstructions, such as cross bracing, etc., a new hole is cut below the bracing or stop, and the operation continues.

16. Question: Does Rocktex soundproof a building in which it is installed?

Answer: Rocktex installed in the walls and roof of your house, eliminates to a great extent, traffic and other outside noises which are very disturbing, especially in case of illness in the home, and even during sleeping hours.

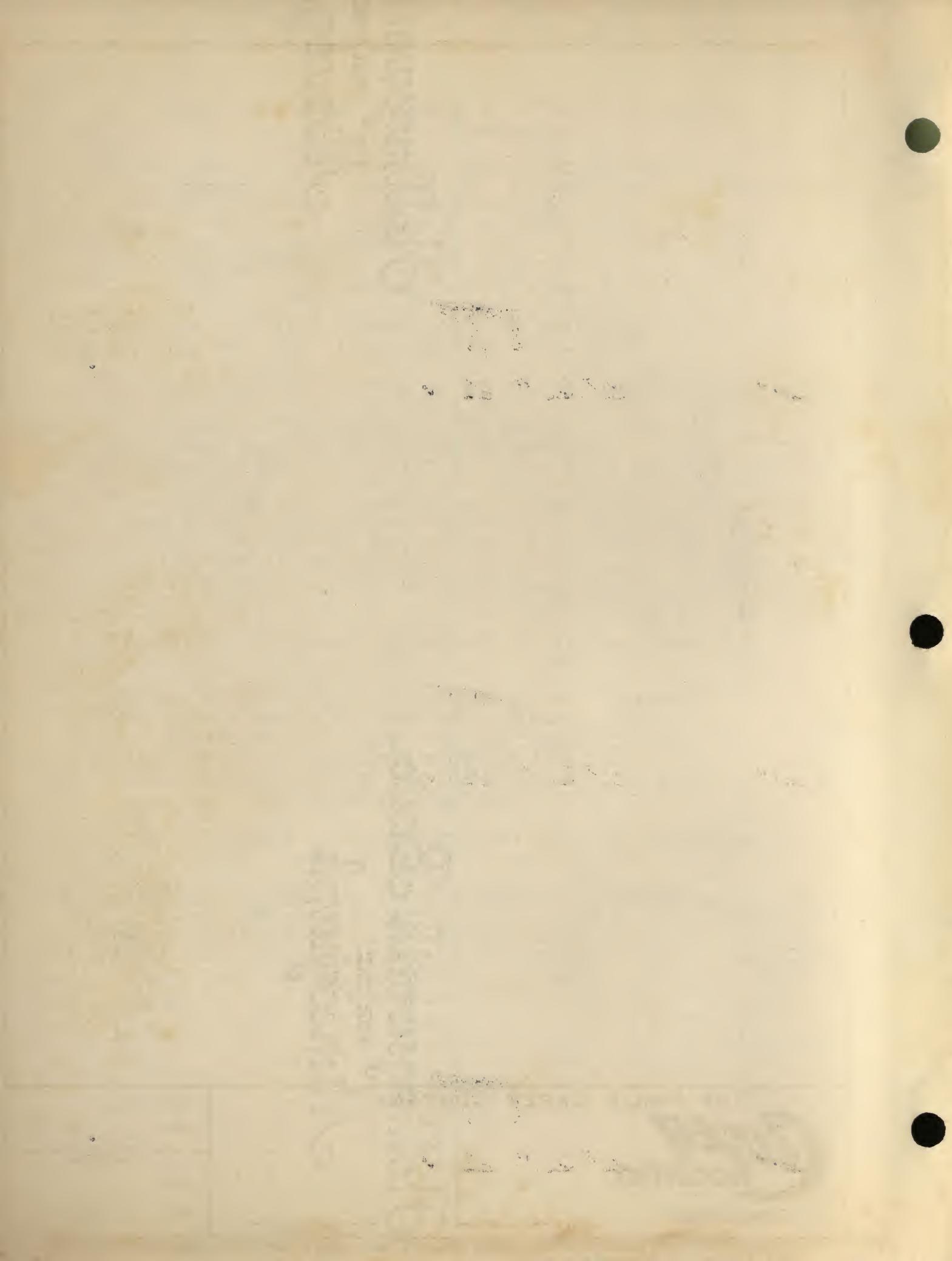
THE PHILIP CAREY COMPANY



DEPARTMENT

Quick Facts

PAGE	48
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	



Rocktex may be used to an advantage as a sound deadener in floors and interior partitions of living quarters, such as hotels and apartments. There is also a good field for Rocktex in the ceilings of bowling alleys, pool halls and theatres, which have apartments over them.

17. Question: Will Rocktex add to the property value of my home?

Answer: Beauty has heretofore been a necessity for ease in selling a home. Today, however, the first question a prospective buyer will ask is, "Is the home insulated?" House insulation has in the past few years received such wide publicity in Newspapers and Magazines that it has become a by-word in new construction and today the uninsulated house is not considered a good investment.

18. Question: What are some of the other features you have not dwelt on?

Answer: Rocktex in addition to all that has been said, has the following advantages, many of which are not found in other materials:

1. Applied dry.
2. Does not absorb moisture.
3. Non-corrosive.
4. Non-conductor of electricity.
5. Easy to handle.
6. Clean to install.
7. Will not harm interior finishes.
8. Will not settle.
9. Manufactured under control of Carey's Research Laboratory.

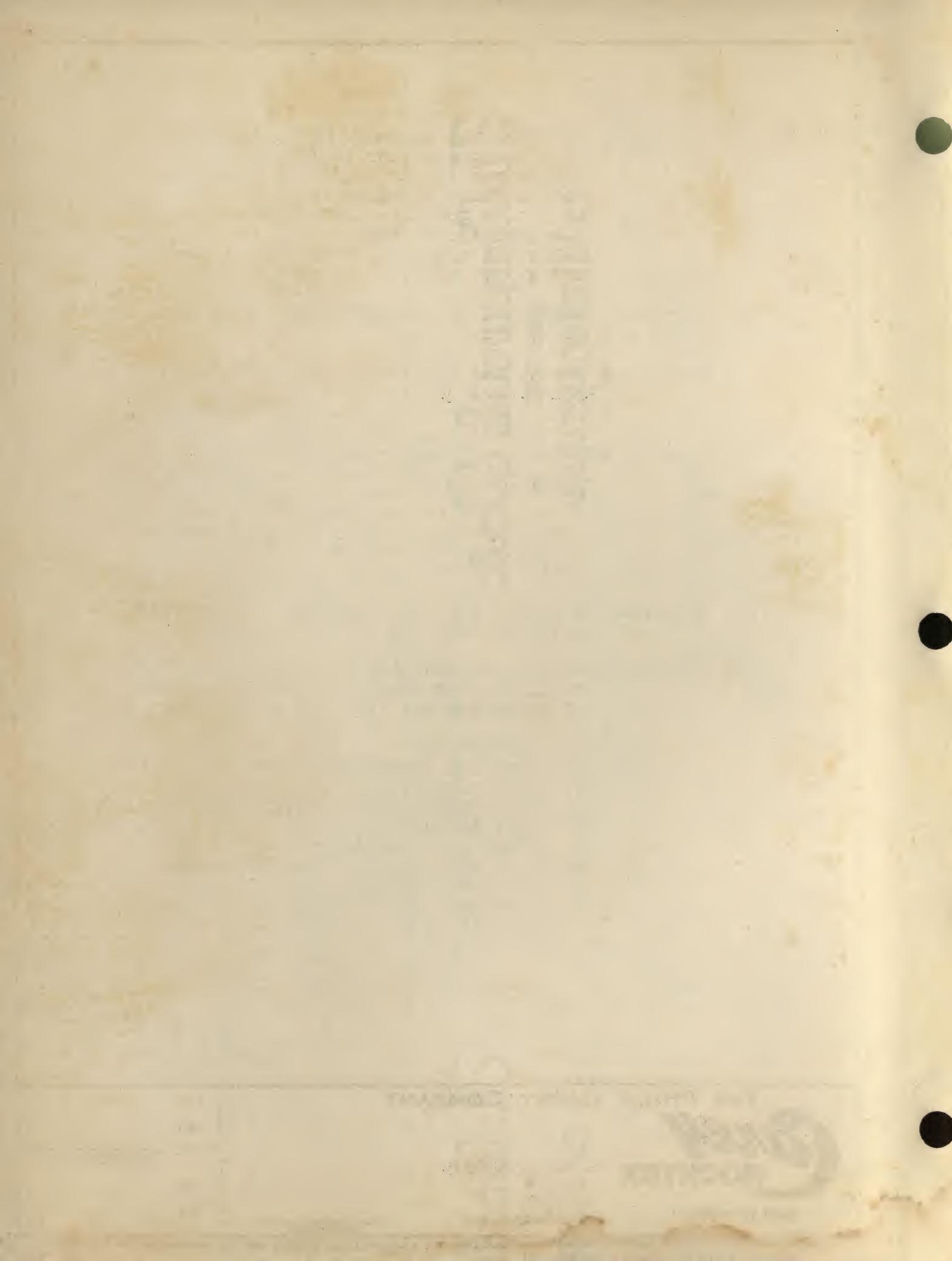
THE PHILIP CAREY COMPANY



DEPARTMENT

Quick Facts

PAGE	49
DATE	7-24-36
SUPERSIDING	
PAGE	
DATE	



DRY ROT

A study of the available literature on dry rot in building materials indicates that we may safely assert that Carey Rocktex Home Insulation neither causes nor promotes rot.

Wood rots are all due to the presence and spreading of cryptogamous plant life, feeding on the timber. In this entire classification, the only ones of importance are the fungi, which require the presence of moisture to propagate. Dry timber does not decay. But some fungi have porous hair-like strands which carry water from the ground or other moist places to adjacent dry timber with the result that apparently dry wood is rotted when actually it is first moistened. Such fungi have been found to have run up building walls for 20 to 25 feet.

The spores of fungi which replace the seeds of higher types of plant life are of microscopic size and are blown about by the air. If they fall upon camp timber, it becomes infected.

The ground appears to harbor many destructive fungi and timber must be kept away from it or well protected with a suitable preservative.

Many times apparently dry timber harbors inactive fungous spores or germs which will start to spread when favorable conditions of moisture again obtain.

Kiln drying and steaming may generally be depended upon to kill fungi but timber so treated may easily be infected later.

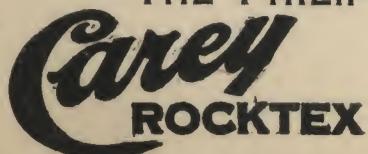
Rocktex has a normal moisture content of .09% and as prepared for home insulation tends to be repellent to moisture rather than otherwise. Hence, it will not moisten wood and thus make the latter less liable to infection. It is not sufficiently dense as installed in place, to hold moisture in suspension against the wood when the outer walls leak, and it very possibly might prevent the infection of dampened timbers by largely reducing the chance of fungous spores being carried to the moist area by air currents.

Among the authorities consulted are the following:-
"Dry Rot in Building -- etc." Circular 78, Alabama Poly. Inst.

"Effect of Kiln Drying -- etc." U.S. Dept. of Agriculture Bulletin No. 1262.

"A Theory on the Mechanism of Rot. of Wood -- etc." Ann. Wood Pres. Assoc.

THE PHILIP CAREY COMPANY



DEPARTMENT

Dry Rot

PAGE	50
DATE	7-24-36
SUPERSEDED	
PAGE	
DATE	

APPROVED



CONVENIENT MONTHLY PAYMENTS

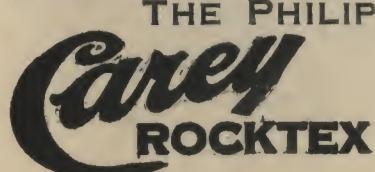
No Down-Payment Required-

As long as 3 years to pay.

The Carey Finance Plan using National Housing Act interest rates is available to responsible home owners.

Example.

An installation for \$330.00 would be financed by securing the home owner's note for \$379.43, payable in 36 monthly installments of \$10.54 each. Further details regarding the Carey Finance Plan, together with a supply of all blanks, will be furnished on request.



DEPARTMENT

Finance Plan

APPROVED

PAGE	51
DATE	7-24-36
SUPERSEDING	
PAGE	
DATE	

